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Journal of the Society of Arts.

FRIDAY, MAY 8, 1863.

THE SOCIETY'S MEMORIAL OF THE PRINCE CONSORT.

The following additional names have been received up to the 7th inst. :—

Beveidge, Esiskine	£1	1	0
Gordon, J. W.	1	0	0
Hall, Ralph	1	1	0
Langton, W. H. Gore, M.P.	1	1	0
Nash, Eliezer	1	1	0
Peake, Thomas	1	1	0
Sewell, Charles Brodie, M.D.	1	1	0
Talbot de Malahide, Lord	1	1	0
Telford, Charles	1	1	0
Virtue, James S.	1	1	0
Wetter, Conrad	1	1	0
Whitaker, Joseph	1	1	0
Whitaker, William	1	1	0
Wyatt, Matthew Digby	1	1	0

DWELLINGS FOR THE WORKING CLASSES.

With a view to promote enlarged investments of capital in model dwellings and other establishments for the benefit of the working classes, the Council of the Society of Arts has instituted a statistical inquiry into the results hitherto obtained, including family dwellings of every description, model lodging-houses, dormitories, refuges, baths and washhouses, soup kitchens, coffee-houses, &c.

Members and others who can supply information or indicate sources where it may be obtained, are requested to communicate with the Secretary, who will send blank forms for being filled up with the required data.

PRIZES TO ART-WORKMEN FOR ART-WORKMANSHIP.

The following notice has been issued by order of the Council* :—

I. The Council of the Society of Arts hereby offer prizes to Art-workmen for the successful rendering of the undermentioned designs in the undermentioned processes of manufacture, according to the directions detailed in each case.

II. Such designs will be by artists of great reputation, to be translated into the various modes of workmanship, and photographs and castings of such designs will be sold by the Society, at the Society's House, at cost price, to persons desiring to be competitors. The prices of the photographs and castings are stated after each subject.

III. The works to be executed will be considered to be the property of the producers, but will be retained for exhibition, in London and elsewhere, for such length of time as the Council may think desirable.

IV. The exhibitors are required to state in each case the prices at which their works may be sold, or if sold

previously to exhibition, at what price they would be willing to produce a copy.

V. The awards in each class will be of two grades, and the sums specified in each class will be paid, provided the works be considered of sufficient merit to deserve the award; and, further, in cases of extraordinary merit additional awards will be given, accompanied with the medal of the Society.

VI. The prizes will be presented publicly. Before the award is confirmed, the candidates must be prepared to execute some piece of work sufficient to satisfy the Council of their competency.

1. MODELLING IN TERRA COTTA, PLASTER, OR WAX.

(a.) *The Human Figure in bas-relief.*—One prize of £10 for the best and a second prize of £5 for the next best, work executed after *Rafaele's design of the "Three Graces."* Dimensions—The figures are to be 9 inches high.

[Photograph—One shilling.]

(b.) *Ornament in bas-relief.*—One prize of £5 for the best and a second prize of £3 for the next best, work executed after arabesques by Lucas van Leyden, 1528. Dimensions, 12 inches by 6 inches.

[Photograph—Sixpence.]

2. REPOUSÉ WORK IN ANY METAL.

(a.) *The Human Figure as a bas-relief.*—A prize of £10 for the best and a second prize of £5 for the next best, work executed after *Rafaele's "Three Graces."* Dimensions—The figures are to be four inches.

[Photograph—One shilling.]

(b.) *Ornament.*—One prize of £5 for the best and a second prize of £3 for the next best, work executed after a Flemish salver in the South Kensington Museum, date about 1670, No. 1153. Dimensions—Ten inches in diameter.

[Photograph—One shilling.]

3. HAMMERED WORK, IN IRON, BRASS, OR COPPER.

Ornament.—One prize of £5 for the best and a second prize of £3 for the next best, work executed after an iron German arabesque, about 1520, in the South Kensington Museum, No. 2450. Dimensions—12 inches by 1½ inch.

[Photograph—One shilling and threepence.]

4. CARVING IN IVORY.

The Human Figure in bas relief.—One prize of £10 for the best and a second prize of £5 for the next best, work executed after a Terra Cotta ascribed to Luca della Robbia, about 1420, in the South Kensington Museum, No. 7610. Dimensions—The plaque to be four inches high.

[Photograph—One shilling.]

5. CHASING IN METAL.

(a.) *The Human Figure.*—One prize of £10 for the best and a second prize of £5 for the next best, work executed after a reduced copy of *Gibson's "Psyche."*

A rough casting in bronze, on which the chasing must be executed, will be supplied by the Society, price, 12s. A plaster cast may be obtained from D. Brucciani, 39, Russell-street, Covent-garden, W.C., price, 3s. 6d.

(b.) *Ornament.*—One prize of £5 for the best and a second prize of £3 for the next best, work executed after a bronze plaque in the South Kensington Museum, No. 1217.

A rough casting in bronze, on which the chasing must be executed, will be supplied by the Society, price 1s.

6. ENAMEL PAINTING ON METAL, COPPER, OR GOLD.

(a.) *The Human Figure.*—One prize of £10 for the best and a second prize of £5 for the next best, work executed

* Copies may be had on application to the Secretary.

after *Rafaele's* design of the "Three Graces," executed in *grisaille*. Dimensions—The figures are to be four inches high.

[Photograph—One shilling.]

(b.) *Ornament in grisaille*.—One prize of £5 for the best and a second prize of £3 for the next best, work executed after a German arabesque (16th century). Dimensions—The same as the Photograph.

[Photograph—Sixpence.]

7. PAINTING ON PORCELAIN.

(a) *The Human Figure*.—One prize of £10 for the best and a second prize of £5 for the next best, work executed after *Rafaele's* "Boy bearing Doves," in the cartoon of the "Beautiful Gate." Dimensions, the same as the Photograph. This work is to be coloured according to the taste of the painter.

[Photograph—Ninepence.]

(b.) *Ornament*.—One prize of £5 for the best and a second prize of £3 for the next best, work executed after arabesques by Lucas Van Leyden, 1628, and coloured according to the taste of the painter. Dimensions—The same as the Photograph.

[Photograph—Sixpence.]

8. INLAYS IN WOOD (MARQUETRY, OR BUHL), IVORY OR METAL.

Ornament.—One prize of £5 for the best and a second prize of £3 for the next best, work executed after a majolica plate in the South Kensington Museum, 1490, No. 1671. Dimensions—The same as the Photograph.

[Photograph,—One shilling and threepence.]

9. ENGRAVING ON GLASS.

Ornament.—One prize of £5 for the best and a second prize of £3 for the next best, work executed after arabesques by Lucas Van Leyden, 1628, engraved the height of the photograph; and if round a glass or goblet, repeated so as to be not less than 9 inches long when stretched out.

[Photograph—Sixpence.]

10. EMBROIDERY.

Ornament.—One prize of £5 for the best and a second prize of £3 for the next best, work executed after a German example in the Green Vaults at Dresden. Dimensions, according to the taste of the embroiderer.

[Photograph—Sixpence.]

VII. The Council cannot hold itself responsible for any accidents or damages of any kind, occurring at any time.

VIII. Persons intending to compete should give notice, in their own names or by cypher, to the Secretary of the Society of Arts, John-street, Adelphi, W.C., on or before the 15th July, 1863.

IX. Each work must be marked with the name of the Art-workman, or, if preferred, with a cypher, accompanied by a sealed envelope, giving the name and address of the Art-workman, and delivered free of all charges, at the Society of Arts' House, John-street, Adelphi, London, W.C., on or before the 31st August, 1863.

COMMITTEES OF REFERENCE.

MANUFACTURES.

The Committee on Manufactures met on Friday, the 1st May, Sir Thomas Phillips, chairman of the council, in the chair.

The CHAIRMAN explained the objects of the committee and invited suggestions from members

present, both as to subjects for which the council might usefully offer rewards, and in reference to which investigations might advantageously be entered into.

Mr. THOMAS C. CLARKSON wished to see some means provided whereby inventions which clashed with existing interests might be brought before the public in a practical shape. He mentioned the difficulties inventors had to encounter from the prejudices and opposition of persons whose interests were affected by particular inventions or applications of materials to manufactures. He had been battling with those prejudices and difficulties for many years in his own case with regard to an application of materials as a substitute for leather.

Mr. BRABY suggested that the difficulty mentioned by Mr. Clarkson, with regard to introducing inventions to the public, might be met by the appointment by the Society of a Committee to examine into inventions brought before them, who, after careful investigation, might give such recommendations as they thought them deserving of, and an invention would then go forth as having received the approbation of such a committee. He thought such a proceeding would have a similar effect to a medal awarded at an exhibition.

The CHAIRMAN said he should be glad to hear the opinions of the Committee upon the practical suggestion of Mr. Braby for the appointment of a body of experts, who in such cases as the one brought before them by Mr. Clarkson might report upon the merits of inventions.

Mr. LATHAM thought the opinion of a jury of experts would be of little value without a full experimental investigation of each invention.

Mr. S. REDGRAVE did not think a jury of experts would be of value. Such a body would find themselves involved in a work of considerable labour and difficulty, which he thought would be more than commensurate with the results that would be obtained.

Mr. P. L. SIMMONDS thought the subject introduced by Mr. Clarkson was one of considerable importance. At the present time leather was scarce in the market; the supply was by no means adequate to the demand, and any practical substitute for that article was deserving of consideration. The Japanese imitation leather at the last Exhibition attracted great notice, and it would be worth while to investigate how far such a substance could be practically employed as a substitute for real leather in certain cases.

Mr. LAVANCHY, reverting to the suggestion of Mr. Braby, thought they were hardly in a position to express an opinion upon it. In some instances it might, he thought, lead to injustice being done to inventions, whilst in other cases certificates might be given which upon more mature consideration would be found to be unmerited. With regard to the public utility of an invention, such a jury might be willing to express an opinion; but, looked upon in the light of an advertisement for the benefit of one individual only, he thought it would be objectionable.

Mr. WINKWORTH remarked that they already possessed a tribunal which was free from the objection alluded to by Mr. Lavanchy. Papers were read in that room from time to time, and the subjects treated of were openly discussed. By that means any particular invention or application of materials obtained a publicity which it would not otherwise have. He thought a committee, which would to a certain extent be a jury of experts, would hesitate before expressing such an opinion as would be of value either to the persons bringing inventions before them or to the public at large.

The CHAIRMAN said the discussions in that room upon the matters brought before the members from time to time amounted to nothing more than the expression of the opinions of the several speakers. In such a case as that which Mr. Clarkson had mentioned, nothing short of a jury of experts could express such an opinion of his invention as he was desirous of having.

Mr. BRABY remarked that the range of manufactures was so immense, that a special committee, to decide upon the merits of inventions and applications of materials, might acquire more importance than was desirable. At the same time, it was to be remembered that one of the main objects of this Society was the encouragement of manufactures, and he thought some such means as he had suggested might be useful for that end, in addition to the reading of papers before the Society. Mr. Lavanchy appeared to take an objection to his suggestion on the ground that it would be uncivilly forwarding individual interests, whereas all useful inventions were for the public benefit. He thought that jealousies on the part of inventors might be avoided by having but one order of merit, and any invention not deemed worthy of that distinction could be passed over, and the world would know nothing of its rejection. He still thought a committee of carefully-selected men would be an excellent means of introducing a meritorious invention to public notice, and inventors themselves would attach value to the testimonial of such a committee.

The CHAIRMAN might say that to a limited extent this Society had undertaken that duty. Whenever an inventor asked the Council to appoint a committee to consider any particular invention, if they deemed the matter of sufficient importance they referred it to a committee of experts, and if that committee found that it possessed substantial merits, they recommended the Council to award the Society's medal for it. This had been done in various instances.

Mr. WINKWORTH said the result of his experience as a juror on textile fabrics on two occasions was a conviction in his own mind that whilst it was hopeless to attempt to give satisfaction generally to competitors, yet, at the same time, nothing was more likely to bring out latent talent than unfettered competition. During the time that the annual Exhibition of Inventions were held in the Society's house, there was a difficulty in getting really important inventions exhibited there, because the manufacturers could sell as many of the articles as they could make without the trouble of exhibiting them, therefore the suggestion was made that they should have international exhibitions, the result of which they all knew. He could unhesitatingly assert that in his own department (silk) there never was a better English display than was produced at the last Exhibition. On the first occasion the French received more credit than they really deserved, but that arose from their manufacturers having exhibited a large quantity of goods and specimens which were the accumulation of years, his friend M. Arles Dufour having recommended the Chamber of Commerce of Lyons to purchase for the purpose of exhibiting. The inquiry now before them was whether, by annual exhibitions of national productions, or by any other means, they could promote the interests of manufactures. He thought those exhibitions were most valuable, as they afforded opportunities of ascertaining how far each nation possessed within itself the means of adapting valuable discoveries in manufactures for the benefit of the community at large as well as of the producer. It would, however, scarcely be right to wait for periods of ten years—(supposing another exhibition to be held)—before inventions and improvements were brought forward, and therefore such a committee as that which Mr. Braby had suggested might be of advantage in assessing the merits of particular inventions.

Mr. J. J. EAMONSON thought the Society might do more good in this direction than it had hitherto done. The present Committee was only now feeling its way, and he anticipated that it would meet on many occasions to exchange opinions for their mutual benefit. The two great exhibitions which had taken place in this country had been most useful, although there were some who thought these exhibitions did them more harm than good. His impression was that the exhibition should be annual, and he recommended that the Society should hold annual exhibitions of the articles made by the producers themselves. [Mr. WINKWORTH—National, or

international?] He would leave that for future consideration. His own opinion was, that the producers of our own country only needed proper information and encouragement to enable them to show what they could do. It was well known that the capitalist was dependent upon the humble working producer. A large amount of the articles sold were produced by the mechanic in his small workshop. This was the case at Birmingham and Sheffield. The factor had not the time, and, perhaps, not the ability, to enter into the question whether the articles he dealt in were constructed in fine artistic proportions. It was sufficient for his purpose that a saleable article was produced. In manufactures they had to deplore, in many descriptions of goods, the entire absence of *proper artistic proportions* and the suitable adaptation of ornament. Under the existing system of education and training of our artisans he did not see how this could be otherwise. The youth who was to be the future producer was apprenticed to a trade at an early age, with little or no previous education, and had to learn his business without any tuition as regarded art or finish beyond what was necessary to gain him a living by his labour. If the Society instituted exhibitions of articles shown direct by producers, and offered prizes like those which were to be given for wood-carving, metal-working, and other branches of trade, he thought it would do a great deal of good.

Mr. LAVANCHY said for years past the tendency in this country had been to produce goods at greatly reduced prices; but, at the same time, the public was scarcely aware that inferior materials were necessarily used, and thus the goods would not bear comparison with those of other nations. But when they employed the same quality of raw material they were fully equal to the productions of other countries. In the last Exhibition his friend Mr. Winkworth would bear him out that there was great doubt in the minds of the jurors as to the comparative merits of the textile manufactures. He alluded particularly to silks, for never had England covered herself with more glory in her manufactures than in the silk department of the late Exhibition. That was owing to adopting the principle of using the same quality of raw material as their foreign competitors. In France of late, and also in Italy, the manufacturers were adopting cheap materials, as had been done in England. At Lyons, by means of a superior mode of throwing silks, an article which was formerly considered unfit for wear was now brought very largely into practical use, and used, too, with great effect in point of price; and goods were made in France at the present time which would rival in cheapness anything produced in this country. Then, again, in the article of shawls, England came out with great glory at the last Exhibition. No nation could make a finer display. He was not favourable to annual exhibitions, inasmuch as they would be very expensive to the exhibitors. There was to be an Exhibition of all nations, in 1865, in Vienna, in which he trusted England would stand in the same position as she had done in that of last year.

Mr. WINKWORTH thought in the present age of rapid progress a great deal was to be said in favour of more frequent exhibitions, although perhaps upon a smaller and less expensive scale. In such cases of course there must be considerable limitation of room, and he apprehended machinery would be out of the question, but as regarded manufactures he thought it a subject worth consideration.

Mr. JOHN BELL said, as to annual exhibitions it occurred to him that an extension of the idea which had prompted the art workmanship prizes might be good; and that it might be desirable that what had been proposed for wood carving, &c., should be extended to many other branches of manufactures, and exhibitions of such a limited nature might be frequently held; but as to annual international exhibitions on a large scale, he doubted if that would be a wholesome thing. He thought it would be impossible to get manufacturers to come forward so frequently. The larger manufacturers were stimulated to send their pro-

ductions to the periodical international exhibitions in defence of their own position, but he believed the majority of them were not favourable to the idea. He was strongly in favour of these great exhibitions being held in different countries, rather than having them too frequently in England. With regard to annual exhibitions of the productions of working men, and the giving of prizes within certain limits, he was strongly in favour of such a proposition.

The CHAIRMAN said he would remind the meeting that the Society had contributed to the prize fund formed by the Painters' Stainers' Company for award amongst workmen, and that company had held in their Hall an exhibition of the works produced. The Society had this year determined to give similar encouragement to wood carvers, and it had also offered a number of prizes in various other departments of manufactures. He saw no reason why the principle should not be extended to other branches. While they prided themselves upon the progress of the present age, and spoke in self-laudation of what was done by their immediate progenitors, any one who visited the exhibition of the works of former ages, at the South Kensington Museum, must be struck with the beauty and skill displayed in the articles exhibited there. The object at the present time was to multiply, for the benefit of the masses, those articles of beauty which our forefathers could only bring within the reach of the rich and the great. With regard to the present meeting, it must be understood that it was only for the purpose of making a commencement; and whenever any member of the committee had suggestions which he thought were likely to promote the object they had in view, the Committee could be called together to discuss them, and some practical action might be taken upon them by the Council.

Mr. EAMONSON stated that he was not at the moment prepared with any suggestions for the extension of the premiums of the Society to other branches of manufacture than had been mentioned in the list sent out.

Mr. NASH called attention to what he considered was a want in the branch of industry with which he was personally connected, viz., working in the precious metals. There was no means, he said, of collecting practical information and facts in connection with that manufacture in such a way that they could be diffused for the benefit of the workmen, to whom they would be of the greatest value. He adverted to the system pursued in apprenticeships, and especially in the Goldsmiths' Company, viz., that the apprentice was bound to follow implicitly the teaching of his master, and "all his secrets keep." The keeping of those secrets had been of the greatest possible injury to the trade and to the public.

After a conversation, in which several members of the Committee expressed their opinion that there would be little chance of inducing manufacturers to divulge valuable trade secrets for the benefit of the community at large, the meeting separated.

TWENTY-FIRST ORDINARY MEETING.

WEDNESDAY, MAY 6, 1863.

The Twenty-first Ordinary Meeting of the One Hundred and Ninth Session was held on Wednesday, the 6th inst., John Dillon, Esq., Vice-President of the Society, in the chair.

The following candidates were proposed for election as members of the Society:—

Alexander, Rev. D. M. ...	Oldham.
Astles, Frederick W.	{ The Laurels, Smethwick, near Birmingham.
Cardwell, Thomas.	8, Up. Hyde-park gardens, W.
Dean, Alfred William ...	{ 32, Queen's-road, Regent's- park, N.W.

Dickson, J.	{ 66, Tollington-road, Hol- loway, N.
Dorling, Henry	{ 62, Warwick-square, Pimlico, S.W.
Tucker, B. R.	{ 8, Albert-terrace, Charlton, Dover.

AND AS HONORARY CORRESPONDING MEMBER,
Lombard, Edouard Auguste, Genève.

The following Candidates were balloted for and duly elected members of the Society:—

Baxter, Richard	14, Porchester-square, W.
Cook, Dutton	{ 4, Raymond-buildings, Gray's- inn, W.C.
Costa, Michael	54, Eccleston-square, S.W.
Cox, Edward	102, Chancery-lane, W.C.
Davidson, Septimus	22, Basinghall-street, E.C.
Dean, Samuel.	{ 5, Cleveland-gardens, Hyde- park, W.
Denison, Alfred	6, Albemarle-street, W.
Dicker, John Campbell...	{ 10, Craig's-court, Charing- cross, S.W.
Harwood, H. Harwood ...	{ 29, Cleveland-square, Hyde- park, W.
Hayes, George, M.D.	{ 63, Conduit-street, Bond- street, W.
Lake, George Walter	13, Finsbury-place South,
Gidley.	E.C.

The Paper read was—

NATAL AND SOUTH-EAST AFRICA.

By JOHN ROBINSON, OF NATAL.

DISCOVERY.

Nearly four centuries ago, on the 25th December, in the year 1497, the small exploring squadron of the Portuguese navigator, Vasco di Gama, having rounded the Cape of Good Hope about a month before, hove in sight of a shore wonderfully different in its soft outlines from the rugged cape eight hundred miles behind them. The coast which these old mariners had now for the first time discovered, presented to their delighted eyes a pleasant succession of green hill-slopes, whose luxuriant vegetation skirted even the ocean's edge; of bush-clad valleys bearing seaward the waters of many ever-flowing rivers; of lofty hills, table-topped or chasm-cleft, bounding the far inland horizon; of great jungle forests, varied by the strange forms and foliage of the euphorbium, the cactus, or the native palm, while over all stretched a bright and genial sky, bespeaking the existence of that happy mean of climate which is possessed by all the lands that lie just beyond the Southern tropic. In honour of the day, this attractive region was named by its discoverers Terra Natalis, and to this day it bears the Anglicised version of that happy designation. It is of this land—of Natal—that I now have to speak.

SITUATION.

The British colony of Natal occupies the same parallel of latitude as Algeria, Queensland, Chili, and other countries similarly situated as regards fertility of soil and variety of resources. It is thirty degrees east of Greenwich, and thirty degrees south of the line, and has at present a seaboard of about 150 miles, overlooking the Indian Ocean at a point of the African continent about 800 miles north-eastward of the Cape. Being 390 miles south of the tropics, we are free from those protracted seasons of intense heat that are incidental to torrid latitudes, while we also enjoy an immunity from the inconveniences and the evils of a low temperature. The climate of Natal is, on the whole, well worthy of its reputation. Mild and congenial, it is neither too inclement nor too relaxing for the European system. The thermometer indicates a range of temperature from 38 to 96 degrees. The

monthly mean during the winter season, from May to August, would range according to locality 60 to 67 deg. This period of the year is characterised by a clear bright sky, by a rainless atmosphere, by a keen bracing temperature before sunrise and after sunset, and by moderate warmth during the day. The summer, or the "rainy season," may be said to last from October to March. At this time, especially in the month of February, the heat is much greater. Occasionally the thermometer will rise to 100 deg. in the shade, and very rarely indeed falls below 60, while it often ranges between 80 and 90. As a rule, the district near the shore is warmer than the uplands. During the summer of 1858-9 the mean temperature of the latter was 69.4 deg., but on the coast-lands it was 74 deg. Periods of extreme heat are not of long duration. On the shore a sea-breeze generally springs up after noon, and renders the air pleasant. The English constitution does not find the colonial climate inconvenient or injurious. On the contrary, Natalian residents invariably complain of the bitterness of a northern atmosphere, on revisiting the mother country after an experience of several years on the coast of South Eastern Africa.

CLIMATE.

Although the area of the colony, properly so-called, does not, as yet, exceed that of Scotland, it is, owing to the peculiarity of its physical conformation, endowed with the climates and the capabilities of many countries that are widely divergent in their topographical relations. The surface of the land rises from the sea-shore to the western boundary of the colony—formed by the Great Drakenberg, or Kahlamba range of mountains—in a series of terrace-like elevations. Thus, although the town of Pietermaritzburg is only fifty miles from the coast, and does not appear to occupy a special altitude, it yet is 2,000 feet above the sea-level. This height is attained by low hill ranges which present a bold face seaward, but which have no corresponding descent on the landward side. In this way the surface gradually ascends until it reaches the limits of the colony, where its height above the level of the sea has increased to nearly 5,000 feet. It will thus be understood why it is that the atmosphere of the shore-belt is more humid than that of the remoter districts, and why in the uplands the temperature of a much lower latitude is not frequently experienced during the winter. It is necessary to state this interesting fact at the outset, as it sufficiently accounts for the unusually comprehensive range of Natal's natural products, and justifies the colonists in looking forward to rapid progress and steady prosperity in the future.

Pleasant as the dry mid-year months may be, the colonists rejoice when the heats of summer arrive, accompanied as they are by periodical rains. After April very little rain falls until October, when the spring showers are anticipated. As a general rule, wet weather never lasts longer than one or two days. On very rare occasions a south east wind sets in from seaward and brings with it a fall of rain, extending, perhaps, over three or four days. After this exceptional occurrence the rivers will be more or less flooded, and some inconvenience may ensue. Thunder-storms are very common during the hotter months. These electrical visitations usually take place in the evening, and though severe for the time being, soon pass away, after having effectually achieved their work of purifying and relieving the atmosphere.

Dr. Mann, in the Chapter on "Climate," which he incorporated in his compiled Guide Book, has given some interesting results of local observations made by himself. During the six summer months of the year 1858-9, he noticed "eighty days on which rain fell in the neighbourhood of Maritzburg, the entire fall for the period amounting to twenty-one inches and six hundredths," giving an allowance for each day of the six months, of "rather more than a tenth of an inch." For five winter months he computed the daily allowance of rain to be

nine thousandths of an inch. These observations were made 54 miles from the coast, where, during the same period, nearly 33 inches was the aggregate of the summer rain-fall.

The other climatal peculiarities which may be briefly noticed, are the occurrence a few times during the year of sirocco-like "hot winds," which blow over the upland and midland districts, from the north-west, and are presumed to have originated in the far western deserts. These warm blasts are excessively disagreeable to the senses, but happily they vanish shortly after midday, and are hardly ever experienced near the coast. Heavy hail or ice-storms sometimes fall, and if they chance to visit a town or valley, may prove destructive to wall plaster, fruit trees, and windows.

As regards the sanitary properties of the climate, it may be distinctly stated that few parts of the world are or can be healthier. Free from any epidemic disease incidental to the country; free, also, from any of those meteorological extremes which are so injurious to the constitution and so unpleasant to the sense—marked by peculiarities which are mostly the means of counteracting some more prejudicial tendency—the climate of Natal is no less congenial than salubrious. It has of course certain conditions of temperature that necessitate the exercise of habitual caution in certain special respects. Sudden alternations from heat to cold; local humidity in particular localities on the coast; heavy dews, or possible malaria, may produce or promote disease in systems which have not guarded themselves from the effects of such influences; but beyond a tendency to dysentery and the occasional prevalence of a sort of low fever, there is in this part of South-Eastern Africa no class of disease partaking either of an epidemic or an endemic type.

HISTORY.

It is impossible, in justice to more important branches of the subject, to enlarge upon the history of the colony. Short though that history is—and little known as may be the country—it records many vicissitudes. After its casual discovery by the Portuguese navigators, the Natalian territory passed for a long period into obscurity. What, during these years, were its features; who were its inhabitants; what their customs, character, or origin—no written record informs us. Two centuries later the curtain is again lifted, and we have fuller information respecting the strange African shore, quaintly supplied us by English and Dutch mariners, some of whom had been shipwrecked there, and some sent on a tour of exploration by the Government of the Cape Colony. The log books of these old sailors have been preserved amongst the local archives, and contain a mass of most valuable and interesting facts. Debarred from the pleasure of quotation, I may simply state that there is greater importance and significance in the historical testimony thus accidentally furnished, because the lapse of 200 years has failed to invalidate it, or to belie any of the impressions there so truthfully formed and so minutely told. What Natal and its natives then were, they, in most of their natural aspects, are now.

With the exception of an unsuccessful attempt made by the Dutch to found a trading settlement there in 1721, nothing more is heard of Natal until 1823, when Lieut. Farewell formed a small band of colonists, who proceeded to the port now called Durban, and established a settlement there. This was simply a private venture, as the British government declined to take any part in the enterprise. These adventurers underwent many vicissitudes, and gathered around them a considerable band of aboriginal followers. They had to propitiate the favour of the great Zulu chieftain Chaka, whose reputation as a warrior and a conqueror was such that, to swear by his bones, is the most binding form of oath current among the natives. A gradual influx of refugees from the rapacity of their own rulers began, and this has been going on so rapidly ever since, that there is now a coloured population within the colony numbering nearly 200,000 souls. In

1835, the English settlers near the port had increased in number, although the original founders of the infant colony had all been removed either by death or departure; an American mission had been formed, and an English mission attempted, and, shortly afterwards, the emigration of the Dutch boers, from the Cape Colony, set into the newly-developed land. Time forbids my glancing at the events which resulted in the struggle between these latter occupants and the British government. It is enough to state that in the year 1843, the territory of Natal was annexed to the Crown, as a dependency of the Cape Colony, and a corresponding reflux into the interior of a great proportion of the Dutch farmers immediately followed. Since that time the colony has gradually advanced in the path of progress. Peace has happily been maintained, and social order preserved. In 1856, the dependency was constituted a separate and independent colony, by royal charter, which also conferred upon the colonists the privileges of self-legislation, by the establishment of an elective legislative council. Such are the main features of our colonial history.

PHYSICAL FEATURES.

From the ravines of the Drakenberg mountains there flow the feeders of several minor streams, which, after intersecting and watering the greater part of our Natalian uplands, amalgamate their waters about sixty miles from the coast, and thence flow down to the ocean as a broad and rapid river, known as the Tugela. This stream, together with its most northerly tributary, forms the northern boundary of Natal. About 150 miles further south, the colony is again limited by another river of less importance, called the Umzimkulu. Between these points, about twenty-four smaller rivers debouch into the sea, bearing with them the contributions of the rivulets and streams which traverse the surface of the land in every direction. Natal, therefore, in no shape partakes of the arid character that nature has stamped upon the western portion of this continent. On the contrary, its contour is undulating; its vegetation is luxuriant; and the valleys which everywhere corrugate its surface are each the channel of running water. Unfortunately, none of these rivers are navigable for any distance from their embouchures. Their rapid descent from the higher ground, and the shallowness of most of them, completely prevent their being employed for purposes of traffic.

The coastlands of Natal are thickly wooded. It is not here, however, that the timber forests of the colony are found. The scenery of this shore belt is delightfully varied and picturesque. Its hills are darkened or mottled by the prevalent jungle bush, which, with its twisted and gnarled trees, its dense, evergreen, bright-leaved undergrowth, its massy flowering parasites, its curious ferns, its insect hosts, and winged multitudes, is a source of peculiar interest and attraction. Many of these bush plants are leguminous, and bear papilionaceous flowers. Although for the most part the larger trees found on the coast are too twisted, hollow, or narrow to be well available for plank timber, yet they are all useful for certain specific purposes. The "Umsimbiti," or iron-wood tree, whose stem is sometimes eighteen inches wide, affords a very heavy and compact wood, used for axles, and other purposes requiring great strength. There are many other woods found upon the coast, of especial value to the waggonmaker, and which may very probably be found valuable hereafter by the boatbuilder or the cabinet-maker. Several trees occur whose strange forms or peculiar qualities are new to the European eye. The prickly pear, the wild banana (*Strelitzia alba*) with its palm-like crest; the euphorbias, in their multifarious forms, from diminutive plants to solemn candelabra-like trees forty feet high, and perhaps more; the grotesque cacti, which cling to the sides of river cliffs, and gigantic specimens of the aloe, twelve feet in height, are only a few of the vegetable novelties abounding in this region. There are also wild bushes which bear edible fruits: the *Amatun-*

gulu, or native plum; (*Vinca*) the Cape gooseberry; (*Solanaceæ*) the raw apple; (*Diospyrus*) a sort of wild cherry, and varieties of wild raspberry, are among the most prominent.

In certain localities of the uplands fine timber-yielding trees are formed. My limits only allow the enumeration of the more important. The yellow wood, a variety of yew (*Taxus elongata*), being a soft compact wood, is commonly employed throughout the colony for every purpose which does not entail exposure. The tree attains very large proportions, and has mostly a bare stem. Sneeze-wood and stinkwood are both long-fibred tenacious woods, of good service to the cabinetmaker, and there are two species of ironwoods extremely close-grained and dark-hued. In addition to these there are many other descriptions, such as the red and white milk woods, the white pear woods, the red ivory wood, and other varieties comparatively unknown as yet. The mimosa tribe is found in every part of the colony and in many species. Its wide-spreading branches cover considerable tracts, but so far, the tree has only been employed as fuel. Its bark is much in favour amongst tanners, and this may very possibly become a valuable export. In the International Exhibition about 150 specimens of the timber afforded by the Natalian forests were exhibited, but owing to their small size only an inadequate idea could be formed from them of the real character and properties of our indigenous woods. Slight doubt is there that in most of these new and little known trees we have the means of improving and amplifying the timber supply of the world, and providing particular branches of industry with a better material than is possessed at present. For cabinetwork, vehicle making, and shipbuilding, our colonial woods undoubtedly present special advantages. Medicinal plants and shrubs are numerous, but this is a department of botanical research wholly undeveloped. It is known that strychnine, senna, sarsaparilla, and castor-oil are yielded by certain trees or bushes; it is known that the natives are cunning herbalists, and make good use of the treasure of the fields and forests around them, but no investigation has ascertained, and no classification defined, the extent or the nature of those treasures.

Beyond the coast belt of woodland the country opens out in wide, rolling undulations, sometimes swelling into massive grass-clad hills, sometimes broken by bands of rugged, precipitous, and shattered declivities, and sometimes sinking into gentle basins or valleys. There are the pasture lands of the colony. Except in the valleys and certain marked localities these uplands are covered by two varieties of grass, consisting either of a long, rank, and wiry variety of grass, or of much shorter, coarser, and redder herbage. Both are abundantly interspersed with wild flowers, representing the *irid*, *amaryllid*, and many other beautiful bulbous plants. The magnificent *amaryllis belladonna*, or "Natal lily," with its crown of massive pink striped bells, may, perhaps, bear the palm of pre-eminence. In the spring month both the woodlands and the pasture lands of Natal are as gay with bloom and verdure as an English garden. The aspect assumed by the country at this time is the more remarkable because of the transformation it effects. Whenever the drought of winter has thoroughly dried and parched the long stems of the rank grass, the natives, and occasionally the white settlers as well, ignite the pastures, and leave the flames to rush furiously onward wherever the wind may take them. For several weeks the air is charged with smoke, the night is illuminated by lines and circles of linked fire, and the hills are blackened. But when September arrives, the bright blades of the fresh pasture appear, and with wonderful rapidity the land is mantled in the freshest green. This wasteful and dangerous practice, so impoverishing to the soil, and so hurtful to vegetation, is now prohibited by law, but the mischief is so easily originated, and the habit is so strong in the aboriginal breast, that the evil cannot readily be restrained.

The geological formation of this portion of South-

Eastern Africa is akin in its character to that of the surrounding territory; granite, sandstone, trap, and shale are the prevailing rocks. Granite rocks are formed in every part of the colony; sometimes as loose boulders, crowning the summit of a high hill; sometimes as large slab masses protruding from the surface. Many of the lower elevations are of granitic formation. A striking characteristic of South African hill scenery is the tabular shape assumed by many of the mountains. Huge masses of sandstone, perpendicularly faced on all sides, crown baseworks of granite, and present to the eye the table-topped hills so often remarked by early voyagers. The summit of these curious and isolated eminences often consists of a wide area of undulating ground, covered with rich pasture, and occasionally watered by springs of running waters. Trap is very abundant throughout South-Eastern Africa. It is found thrusting itself alike through the granite and the sandstone, spreading out in rolling plains, or swelling up into bold hills. The "Silurian" sandstone of Natal contains no fossil remains of any importance, except the impress of vegetable forms found in some of the earlier formations. In the region bordering on the southern boundary some interesting petrifications have been found near the coast. Shale is very plentiful indeed, and being easily obtained and readily worked, is largely used in building. It is a light, flaky stone, the hardened detritus of older formations, and requires protection from the sun to be permanently preserved.

Very little is known as yet regarding the mineral resources of the colony. Surveys have been made, explorations attempted, and speculations indulged in; but, beyond a few raw facts, no complete and comprehensive classification has been attained. The natives have always been in the habit of using iron weapons, obtained by the rude smelting of surface ore. Ironstone is encountered over the whole district, in the shape of small boulders, and though never developed, there is reason to believe that the country is largely endowed with this valuable metal. Coal, a resource of inestimable importance to a land well placed for the purposes of maritime traffic, has been found in such quantities, and of such quality, as to indicate its existence in an available form and to an adequate extent. Plumbago is of frequent occurrence, and lead is also asserted, by credible authorities, to be present. The discovery of copper has often been announced, but the discovery has never been followed up. Traces of silver have also been observed. Ten years ago, when the prospects of the colony were not cheering, owing to the successful competition of the Australian gold-fields, a large reward was offered by an influential body of colonists to the discoverer of gold in sufficient quantities, but the reward was never earned. The aspect of many parts of Natal is very similar to that of the Victorian gold-fields. Quartz in some localities is singularly abundant, and mica is present in the beds of some of our rivers. Gold ornaments have been exhibited by natives, as the product of places in the interior, and very sanguine expectations have been hazarded in regard to the existence of the precious ore. Time, however, has yet to reveal whether Natal is to be another source of auriferous supply. It will thus be seen that the mineral possessions of this part of Africa remain entirely undefined and uncertain, and may prove in the future to be either much greater or much less than they are now presumed to be.

Twelve years ago Natal was the home of many wild animals which can now be only found in the remotest wilderness. The elephant, the lion, and the rhinoceros, had at that time a habitat within the limits of the colony. Now, however, they, and most other varieties of *feræ* have retreated before the invasions of hunters and settlers, not merely out of Natal, but even beyond Zululand and the Orange River Free States into the jungles, and on the plains of regions where the sportsman and the wanderingsavage are the only human visitants. Brute life is principally represented by the antelope tribe, known locally by the generic name of "bucks." Of these there are many

varieties, duiker-bucks, reit-bucks, rhe-bucks, oribis, blue-bucks, spring-bucks, bush-bucks, and blesse-bucks, are the most common of the smaller-sized species. Elands, hartebeests, wildebeests (gnu), quaggas, and zebras, are all of a much larger size, and are only found during the winter months in the country below the Drakenberg. Hippopotami, or sea-cows, are often encountered on marshy lakelets or reedy river-beds. Panthers, misnamed "tigers" by the colonists, occasionally demonstrate their existence by a raid in some farmer's cattle-yard or sheep-fold. Alligators, or more properly crocodiles, are far too numerous in some of our rivers, but they will doubtless disappear as population and traffic increases. Tiger-cats, *lynxes*, jackals, wild dogs, wild pigs, porcupines, antbears, hares, rock-rabbits, monkeys, and baboons, may be mentioned as the most common of Natalian quadrupeds. It must be understood that the only way in which any of these animals become offensive to European settlers is by occasional depredations among calves or poultry. There are residents of twelve years' standing who have never seen anything more offensive than a monkey or a mole. Snakes are numerous. The cobra, the puff-adder, and the mamba are the most obnoxious, but it is a rule that unless trodden on or attacked, they never molest man; the last, however, exhibits a most remarkable propensity to chase any human object of its anger.

The ornithology of Natal has not been the subject of any thorough scientific research. The collection of stuffed birds exhibited at South Kensington was a fair representation of its class, and the admiration it evoked would be renewed on a personal experience of the bird-life which abounds in the jungle and the forest. Game birds are found in great variety. Foremost among these must be placed the paauw, or wild turkey, a sort of bustard, of large size and delightful flavour. The koran is another winged *specialité*, dear to the hearts of sportsmen; pheasants, quails, pigeons, guinea-fowl, partridges, and snipes are plentiful enough in the field or in the bush. Ducks are more choice in their localities. The long-legged tribes abound everywhere, either as storks, cranes, or pelicans. That devourer of snakes, the secretary-bird, the voracious locust-bird, the diminutive but noisy honey-bird, the big-billed toucan, the long-tailed kafirfinch, the gay lori, the brilliant kingfisher, the African canary—these are only a few of our Natalian birds. There are also birds of a fiercer disposition. Vultures are in wait for carrion; hawks threaten your broods; kites and owls are common; the golden eagle and the sea eagle haunt the mountains and the shore; the ubiquitous crow is super-abundant, and has here assumed a white collar round its neck. Varied in plumage, eccentric in their notes, strange in shape, and peculiar in habit, the colonial birds supply an interesting sphere of study to the naturalist.

I cannot enlarge upon the other varieties of animated life. Entomology is richly illustrated by innumerable tribes and divisions. *Orthopterous* or fawing insects have notable representatives in immense locusts, multitudinous grasshoppers, twig-shaped *phasmide*, grotesque mantises; in countless beetles, crickets, and cicadæ. Butterflies of every hue suffuse the summer air. Fire-flies illuminate every rivulet and marsh. Ants, from the infinitesimal red emmet to the destructive termite, are one of the most serious pests inflicted on the colony, but the insect known locally as the tick (*ixodes*) is universally held to be the most offensive to human beings and to quadrupeds. There is one almost invisible variety, which has a passion for burrowing into and irritating the skin of man, and there is a larger species which attacks cattle in such numbers and with such rapacity as to be a positive injury and nuisance. This obnoxious little creature is principally confined to the coast-lands. If space permitted it would be expedient to notice the spiders, moths, centipedes, and other kindred varieties, but this bare allusion to our superabundant insect life must suffice.

Thus much in regard to the physical features and natural resources of Natal. This rapid *resumé*, inadequate

though it be, will have sufficiently shown that every branch of the three great kingdoms of nature is, in a greater or lesser degree, represented. The soil is varied and fertile; the rocks, though palaeontologically barren, are in all probability commercially valuable; the vegetation is rich, luxuriant and novel; the climate is agreeable, and the fecundity of brute life is only a pledge of natural abundance and an earnest of future wealth. To the savant, the naturalist, or the speculator in search of new fields of enterprise, this part of South Eastern Africa may be commended as a generous region of research, or as hopeful ground for investment.

NATURAL CAPABILITIES.

In describing the commercial products of so rich a country, great brevity will be requisite. Twelve years ago, Natal had no exportable products to send her creditors. Her capacities at that time were based on supposition, and subject to uncertainty. Her coastlands were not only wholly uncultivated, but were a *terra incognita* to the colonists themselves. Her position, then, in the year 1850 was identical with that of Britain in Druidical times, or of North America in the days of Raleigh. When the first World's Fair was held, our colony had not merged from its helpless babyhood; it had failed so far to find its feet; it had neither a name nor a voice of its own. A cycle of eleven years has elapsed; another exhibition opens its doors, and, instead of the few karosses and the prodigious oxhorns that represented our resources in 1851, we have had more than 250 specimens, surrounded by pictorial illustrations of the colony, occupying a court of their own, which was furnished entirely by local artificers and local industry, and which was the only appearance made by any of the South African colonies or states.

It has already been remarked that the rapid fall in the elevation of the ground which ensues between the mountain boundary of the colony on the west and the sea coast, results in a wide and unusual diversity of products. Thus, *par exemple*, on the littoral or coast belt, sugar, arrowroot, coffee, ginger, and other tropical plants are grown and manufactured. About forty-five mills, mostly driven by steam power, are employed in manufacturing the eleven thousand acres of cane scattered in different plantations along the shore. A colonial exhibitor received a medal for one of twelve excellent samples of sugar which were sent to the Exhibition, and other samples were highly commended. There is no question about the success of this branch of agricultural enterprise. It has been produced with remunerative results alike by men of the smallest means and by the possessors of capital. The yield per acre is fully equal to that obtained in the Mauritius, where the application of manure, never yet known in Natal, is an indispensable expedient. I may state that a personal inspection of the latter island has convinced me that the prospects of Natal as a sugar-producing country are not depreciated by a rigid comparison between the two places.

The coffee grown in Natal has been declared on various occasions, by competent judges, to be of first-class quality. No reliable data as to yield can be furnished, as the plantations in existence are neither large enough nor old enough to justify any general conclusions. That the tree thrives and bears a berry of excellent flavour has, however, been sufficiently ascertained, and considerable attention is being devoted to the cultivation of the shrub. Tea is a product of very recent introduction. Almost the first sample prepared was exhibited at South Kensington, and received private commendation. In soil and climate much similarity subsists between Natal and China. Arrowroot has given occupation to many agriculturists of small means, and, were the home market more extensive and encouraging, any quantity might be produced. The article manufactured might almost be classed with Bermuda. Indigo is indigenous to the soil. Its growth was attempted on a large scale some years ago, but doubt still exists whether the climate will not interfere with the successful manufacture of this delicate but important

staple. Ginger and turmeric are both grown for private use. Tobacco is found to thrive all over the colony. A coarse variety of the plant has long been grown by the natives of South Africa, who are inveterate smokers and snuff takers, and cultivation is found to supply a leaf of excellent quality. At this moment experiments are being made with Latakia, Virginia, and Manilla tobacco seed, and there is every prospect of a large export hereafter.

In the midlands and uplands of the colony agriculture assumes a more European character. Indian corn or maize, and oats, are grown largely over the whole district, but in these higher localities wheat, barley, pulse, and other descriptions of grain are cultivated. Wheat, I should state, is by no means a common or hardy product, and has not been so successfully acclimatised as other sorts of corn. Vegetables, both in European and tropical forms, are readily grown. Pumpkins, melons, squashes, yams, and sweet potatoes, are found side by side with beans, peas, and the other kitchen favourites of northern lands. Fruit has an equally wide range. From the pine apple and the papaw to the apple and the peach, there are few varieties of fruit that cannot be luxuriantly grown. Some of the most familiar English plants, the gooseberry, the strawberry, and the currant, are perhaps the exceptions.

Stock farming has been impeded by the devastations of pleuro-pneumonia amongst the cattle, and by the periodical outbreak of a fatal epidemic amongst horses. The first scourge has been partly counteracted by inoculation, and seems dying out, after having swept South Africa. The latter is only an occasional, and not a regularly recurrent evil. Imported blood, in the shape of bulls, cows, and thorough-bred stock horses, is constantly introduced from England and the Continent, and is effecting a vast improvement in the character of local stock. Formerly Natal was known as a land overrun with cattle, and there is every reason to anticipate that the many million acres of her pasture lands will continue to feed the flocks and herds of a pastoral people.

Fibre-yielding plants have a genial home in Natal. A coarse description of flax is a native of this country. Many of the wild grasses and shrubs afford textile fibres of great fineness, silkiness, and tenacity. The Zulus make string and rope from a hemp plant that grows in spontaneous abundance about their kraals. Here, however, as in other branches of botanical knowledge, great ignorance of local resources prevails. More is known about the common fibre-staples of commerce. Silk can be produced to any extent, as the mulberry grows with remarkable rapidity, and the worms are specially prolific. It is to cotton, however, that the colonists look most hopefully under this head. Twelve years ago several tons of this staple were grown and shipped, but the enterprise has not, until quite recently, been prosecuted; now the natives are being encouraged by government to cultivate the plant on their own account, and several bales of fair average quality have been produced in this way. Many European colonists are turning their attention to cotton cultivation as a remunerative occupation. It has been ascertained that sugar and cotton can be advantageously grown together, as the busy season of one product is the idle season of the other, and thus the all important consideration of labour is economically met. The very indifferent specimens of Natal cotton in the International Exhibition, though by no means a fair representative of what the colony produces, were, nevertheless, priced by the Manchester Committee at rates varying from 1s. 0½d. to 3s. per lb. Later samples, privately sent to cotton-spinners, have been valued at a much higher rate. The manager of one of the largest mills in the kingdom told me, not long ago, that the only fault of our cotton was the extreme length of its staple, it being too long for the machinery required by other varieties. Careful calculations warrant the belief that cotton of an excellent description can be grown in Natal at a cost of from 4d. to 6d. per lb., and we may sanguinely anticipate—that as Natal can produce cotton in remunerative quantities and of good quality, on

favourable terms—as it possesses a delightful climate of proved salubrity—as it has within its borders and around it, up to indefinite latitudes, a large colonial aboriginal population—and as its maritime and commercial facilities are great—it will be one of the sources from which Manchester shall hereafter derive these supplies so necessary to the national prosperity.

This brief sketch of our natural resources, inadequate though it is, will suffice to show how singularly favoured the land is in the means of wealth; how varied are the openings presented to men of energy and enterprise; how wide and hopeful is this field of action to those who have capital to invest or labour to expend.

COMMERCE—IMPORTS—REVENUE.

The extent and direction taken by the commerce of a country are of course very largely governed by the maritime advantages it enjoys. It may here be stated, therefore, that the Port of Natal is the only real harbour, worth the name, that occurs throughout 700 miles of seaboard. Between Algoa Bay and Delagoa Bay there is but one secure and accessible haven, and that is our beautiful land locked bay. A sandbar at the entrance has hitherto prevented the ingress of vessels of more than 800 tons burthen, but, the colony having agreed to the negotiation of a loan of £165,000 for the special purpose, two breakwaters, designed by Mr. J. Abernethy, C.E., and constructed on the model of one at Blyth, are now being run out. These works are contracted for to be completed within six years, and in four years it is anticipated that their completion will secure a permanent depth of water at the entrance of twenty-five feet, when Natal, from its relative position, must be not only the gateway through which shall pour the produce and the supplies of all South Eastern Africa, but the natural calling place for many homeward-bound or distressed ships. There is a steam-tug attached to the port, and a railway, the first opened in South Africa, connects the harbour with the town of Durban. A patent slip is also likely to be erected.

The progress of shipping and trade will be best understood by the table in the next column. It will be seen that trade has doubled itself in the last five years, and that the exports are nearly five times greater than they were ten years ago.

In order that the development of productive industry may be more fully understood, I append a table (see below) giving a bird's-eye view of our principal exports

during the past ten years. Wool and ivory—the oldest in the list—still remain prominent items, and the first will increase in a faster ratio hereafter, as sheep-farming

TABLE OF IMPORTS.

YEAR.	SHIPS INWARDS.		VALUE OF GOODS IMPORTED.			IMPORT DUTIES RECEIVED.		
	No.	Tons.	£	s.	d.	£	s.	d.
1846	30	3,528	41,958	10	3	3,510	16	6
1847	27	3,226	46,981	8	3	3,207	1	11
1848	32	4,166	46,204	6	10	4,705	3	3
1849	40	5,905	55,921	14	11	5,502	6	0
1850	64	16,581	111,015	11	5	10,911	13	0
1851	52	8,951	125,462	6	8	12,122	19	7
1852	45	6,138	103,701	5	4	10,003	12	0
1853	43	5,015	98,534	13	2	9,800	3	4
1854	37	8,049	112,492	6	11	10,816	1	8
1855	27	3,705	86,551	9	9	8,612	2	6
1856	41	5,007	102,512	4	7	10,227	2	4
1857	40	8,117	184,549	0	0	14,626	12	6
1858	45	11,025	172,832	0	0	15,928	17	7
1859	52	10,494	199,917	0	0	18,651	12	11
1860	71	15,464	354,987	0	0	33,861	0	2
1861	97	18,192	402,639	0	0	37,400	6	5

EXPORTS.

YEAR.	SHIPS OUTWARDS.		VALUE OF GOODS EXPORTED.						TOTAL VALUE OF GOODS EXPORTED.		
			Colonial.			Not Colonial.					
	No.	Tons.	£	s.	d.	£	s.	d.			
1846	32	3,678	15,409	7	9	1,733	8	0	17,142	15	9
1847	27	3,226	13,669	4	6	707	10	0	14,376	14	6
1848	31	3,761	10,683	17	4	183	0	0	18,866	17	4
1849	39	6,066	11,265	0	0	726	6	3	11,991	12	3
1850	61	14,940	15,613	12	3	1,492	13	0	17,106	5	3
1851	52	8,829	17,423	10	0	4,393	15	0	21,817	5	0
1852	49	6,460	20,164	16	6	7,680	18	3	27,845	14	9
1853	43	6,138	26,684	0	10	9,764	15	0	36,458	15	10
1854	39	7,823	37,555	1	0	6,106	1	0	43,661	2	0
1855	30	4,287	45,126	14	4	6,946	14	0	52,073	8	4
1856	41	5,149	53,931	2	5	2,631	11	0	56,562	13	5
1857	41	7,973	77,844	6	9	4,652	4	6	82,496	11	3
1858	44	10,690	90,882	0	0	9,705	0	0	100,587	0	0
1859	49	9,811	103,472	0	0	6,942	0	0	110,415	0	0
1860	64	14,164	129,391	0	0	10,307	0	0	139,698	0	0
1861	100	18,655	108,920	0	0	10,287	0	0	119,207	0	0

is one of the most successful and hopeful of our many industries. Sugar will also reveal a more rapid increase, while cotton, coffee, and live stock will be more auspicious features in the returns for the coming ten years than they are in these now given.

TABLE OF EXPORTS.

	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Wool	2,026 10 0	3,450 6 0	3,366 0 0	8,331 10 0	7,325 10 0	9,887 10 0	11,360 0 0	23,988 0 0	27,790 10 0	32,887 19 10
Ivory	6,274 10 0	8,634 0 0	14,688 10 6	13,504 10 0	13,715 0 0	18,170 0 0	31,754 0 0	17,618 0 0	21,064 0 0	22,825 0 0
Butter	6,700 13 0	5,506 0 0	8,444 10 0	8,915 2 1	7,591 0 0	12,142 8 0	15,685 0 0	17,610 0 0	19,306 0 0	14,582 0 0
Hides	1,196 10 0	902 14 0	2,041 0 0	3,201 6 6	11,568 10 0	22,365 2 5	16,387 0 0	11,339 0 0	15,920 16 0	9,793 3 0
Arrowroot ...	...	31 12 0	97 10 0	999 7 0	1,826 10 0	3,135 18 6	5,464 0 0	13,336 0 0	6,680 1 6	4,684 11 0
Wood .....	...	1,958 15 6	3,599 0 0	1,705 4 6	691 6 4	885 1 0	1,301 0 0	298 0 0	209 0 0	...
Sugar .....	...	...	2 0 0	19 5 0	483 15 0	2,008 15 3	3,067 0 0	8,368 0 0	32,005 16 0	19,415 16 0
Meat .....	...	651 17 0	298 0 0	3,369 10 0	5,468 15 0	869 10 0	...	299 0 0	96 0 0	...
Grain .....	...	...	...	...	...	...	...	2,467 0 0	1,030 0 0	190 0 0

The commerce of the colony is carried on by wholesale importers and retail storekeepers. Commodious warehouses and well-appointed shops are numerous in the two principal towns. Five banks—three of which are local companies, one a private establishment, and the last a home-branch—absorb the financial operations of the community. These institutions represent an aggregate capital of nearly £200,000. Like all other colonies, Natal suffers from an insufficient currency. The development of enterprise in a new country is in advance of its available capital, and money commands twelve per cent. interest on the best security. A too diffuse credit system is the greatest bane we have, but it is hoped, as wealth

and population multiplies, that this evil—a necessary condition of colonial existence—will be remedied. A Chamber of Commerce has been established some years, and its functions may be usefully employed.

The commercial relations of the colony are somewhat extensive. In addition to the internal requirements of the European settlers, there is a large Zulu population to supply with beads, blankets, hoes, and other knick-knacks. There is also a considerable trade with powerful tribes on the northern borders carried on by itinerant traders, some of whom go in ox-waggons, while others march afoot, carrying their wares in packs borne upon the shoulders of perambulating natives. Both these classes

pass from kraal to kraal until the stock of goods is sold, and cattle obtained in exchange. A strange wild life is that of these Zulu traders, something akin to that of the North American trapper, as immortalised by Irving. Single-handed, and all but unarmed, they wander into the midst of barbarous tribes, with whom warfare is a habit, and massacre a common occurrence, and yet, so great is the prestige of their colour and race, that I can cite no instance of one of them being maltreated. Such is the *moral influence* of national integrity, humanity, and power.

Beyond Natal, extending westward and northward, are two large free republics, each being many times larger than the colony, principally occupied by the descendants of the Dutch Boers, whose exodus from the Cape Colony 30 years since I have already referred to. That lying nearest to Natal is the Orange Free State, formerly, when under British rule, known as the Sovereignty, and offering boundless capabilities upon its vast prairie plains for sheep pasturage. The state north of this is called the South African (or Trans-Vaal) Republic, with a more purely Dutch population, and a diversified range of resources. With these communities the mercantile houses of Natal carry on a large trade by means of branch establishments, some of which have proved the nuclei of prosperous townships. To a country having such wide connexion, the matter of transport is of vital importance. So far waggons, drawn by long teams of oxen, have carried traffic, and for some time to come they will be the only available medium. Roads, however, are continually being made and improved, and bridges erected. The expenditure in 1862, under this head, was £13,707. A company has been formed in London to undertake the establishment of a railway between the seaport and Pietermaritzburg, the seat of government. The capital subscribed is £500,000, and the length of the line will be about 60 miles. This undertaking will be an immense boon to the colony.

If the revenue returns of a country are a sure index of its progress, Natal may show hers to the world with justifiable confidence. Beyond postal charges, customs duties, and a few stamp payments, there are no direct taxes levied, and yet, during the three years elapsing from December, 1858, the public receipts were trebled. By the table annexed, it will be observed that the main increase is under the head of customs, a significant and satisfactory sign. A tax of seven shillings per hut is imposed upon the native population, a small equivalent for the security and blessings they enjoy.

The following is an abstract of the Probable Revenue for the Year 1862, showing also the Revenue received under similar heads for the years 1861 and 1860.

	Estimate for 1862.			Revenue for 1861.			Revenue for 1860.		
	£	s.	d.	£	s.	d.	£	s.	d.
Customs	40,050	0	0	37,471	12	4	33,927	1	0
Port and Harbour Dues ...	1,500	0	0	1,481	12	0	1,056	11	0
Land Sales	2,000	0	0	1,498	16	0	566	7	10
Land Revenue	9,895	13	4	5,800	9	2	3,997	9	10
Rents, exclusive of land ...				6	0	0	6	0	0
Transfer Duties	9,000	0	0	13,587	8	2	5,721	14	5
Auction Duties	2,200	0	0	2,175	3	3	980	12	11
Licenses				5	0	0	25	0	0
Stamps	2,500	0	0	2,644	9	6	2,417	19	6
Taxes	17,500	0	0	16,906	7	0	14,570	17	0
Postage	3,500	0	0	3,131	16	7	2,391	1	8
Fines, Forfeitures, and Fees of Court	2,500	0	0	2,040	12	4	1,977	11	10
Fees of Office	1,200	0	0	1,120	1	0	864	14	5
Sale of Government Property	1,500	0	0	7,841	10	3	70	8	11
Reimbursement in aid of expenses incurred by Government	3,500	11	9	7,083	18	0	4,114	7	1
Miscellaneous Receipts ...	3,600	0	0	3,258	13	1	2,657	16	0
Special Receipts				510	1	4	1,945	11	9
Interest	800	0	0	260	0	0			
Total	101,246	5	1	110,823	10	0	77,291	5	2

The time allowed me necessitates a very hurried glance at the social condition of the colony. In the absence of any reliable census, the white population may be assessed at about 15,000. Of these 2,500 are resident in the seaport town of Durban, and 3,500 in the city of Pietermaritzburg. Several villages are scattered through the country districts. Their modes of life, though crude in some respects, are more polished than in many other similarly situated communities. Never having been subject to a rush of emigration, the class of British settlers is of a superior order, and a higher degree of intelligence than is found in dependencies whose rate of progress has, owing to special causes, been greater. On this point I may quote the words of His Excellency Sir George Grey, than whom no one is better qualified to give an opinion:—"Among those who have arrived from Great Britain are included a considerable number of English gentlemen of good education, of great intelligence, and who have had much experience in Natal. With a considerable acquaintance with British Colonies, I should say that in the character of its European population, in proportion to their total number, Natal might, with no disadvantage, be compared with any other colony. It was partly from the intelligence and prudence, with which I cannot but think that its inhabitants of European descent are peculiarly distinguished, that their requests to have some share in legislating for their country were of so modest and simple a character."

This flattering testimony will serve to explain why so much activity and interest is displayed in social movements. The institutions of the colony would require more space for detailed description than can here be given them. There are several Agricultural Societies that hold annual shows, and stimulate enterprise by the distribution of prizes. At Durban there are large Botanical Gardens, where the vegetable products of the soil may be learnt at a glance. There are Literary Institutions and Book Clubs, Building and Investment Societies, Young Men's Improvement Associations, and other kindred organisations. Education is vigorously sustained and promoted under the able superintendence of Dr. Mann, F.R.S. Fifty schools are established, and in receipt of pecuniary aid from the public exchequer, and fourteen private seminaries are under government inspection. In these 1,100 scholars acquire the rudiments of practical knowledge. The Corporations of Durban and Maritzburg have endowed, with £5,000 each, two colleges that will shortly be in action, and the local government contributes an equal amount. By such instrumentalities the colonists hope to avoid the retrogressive tendencies incidental to their condition.

The claims of religion are liberally recognised. Almost every religious denomination is represented in either of the towns by a substantial edifice for the use of its worshippers. The Church of England, under its large-minded Bishop, vigorously pursues its operations, and Independents, Wesleyans, Presbyterians, and Baptists, have all a distinct organisation. A Roman Catholic Church, under the charge of a French Bishop, has been established many years. In the country districts, in addition to the very numerous mission establishments, there are many churches and chapels.

I have been unable to collect statistics of crime, but I may state that there are only three prisons in the country. Remarkable security for life and property is enjoyed. Upon farms it is quite unusual to fasten doors or windows, and houses are sometimes left exposed and tenantless for weeks together with impunity.

The Zulu Kafirs, of whom it is impossible to give more than a passing notice, number in Natal about 190,000 souls. They are mostly refugees from neighbouring territories where the tyranny of native chieftains affords no protection to the subject. Owing to this fact, our colonial population is wholly fragmentary and disorganised in its composition. There is no cohesion among its parts, and this want of union, together with the trivial jealousies which prevail, is an effectual bar to any hostile movement. Throughout the Kafir war of 1852-3, and ever since,

peace has been maintained unbroken, and there is no reason to look forward apprehensively to the future. Twenty years of peace have matured a generation of Zulus with whom bloodshed is but a tradition rather than a fact. They know little of war, except by hearsay or by dim childish recollection. The pacific experiences of childhood and youth have blunted the warlike instinct and effaced the sanguinary reminiscence. Unlike the natives of New Zealand, the Kafirs of the Cape frontier, or the Red Indians of America, a cycle of domestic servitude and political order has tended to deaden, if not to obliterate, the worst passions of the savage nature. Like all other barbarians the Zulus are a mixture of good and bad. They are lighthearted, active, deferential to their superiors, and attached to those who treat them well. But they are also avaricious, indolent, passionate, deceitful, and sensual. It is very probable that under firm, just, and consistent treatment their better natures may be made to predominate. They know how to obey a stern master, who has, at the same time, won their confidence and respect; but they know also how to presume upon well-meant though ill-judged indulgence and familiarity. Any new license granted them is taken advantage of and abused. Naturally independent, they will, if allowed, become personally insolent. The Zulu is eminently susceptible of civilisation, but he is equally open to the injurious impressions left by vicious example and criminal association; he may as readily be educated to roguery as to probity. It cannot be said that he has the instinct of plunder normally developed in his breast under any but special circumstances. It is only when he has learnt the vices of civilisation that his natural cupidity is aroused, and, contaminated by contact with a superior race, he essays to follow in its footsteps. In illustration, I may allude to the unpalatable fact that a colonist prefers, as a servant, a raw Kafir from his kraal to a "civilised Kafir" from a Mission Station, having found by experience that the latter is too often the greater scamp of the two. It is doubtful whether cotton will, immediately at any rate, be largely grown on their own account by the natives. They are very crude agriculturists, and a long process of initiation will have to precede their cultivation of the plant in sufficient quantities. They are averse, moreover, to systematic industry; they like to cultivate their own hillside patches in their own capricious and irregular way; they rarely replant the same piece of ground for successive seasons, and are utterly unused as yet to any rule or routine whatever in the matter of agriculture, living as their fathers lived, and as they would fain still live, on the produce of scattered fields eccentrically hoed up by their slave wives and marketable daughters. It is one of the anomalies of native government that in a free British colony, woman, the dearly-prized helpmeet of the European, is, according to the laws of our colonial population, a chattel, and on reaching a marriageable age is disposed of by her father, wholly irrespective of her own feelings in the matter, to the man who offers for her person the highest number of the fatted cows.

The number of natives that enter service for different periods during the year has been reckoned at 20,000. This is but a small proportion of the native population, and the evoking of more labour-power from this—the proper element—is, and ever has been, a fruitful topic of local discussion and legislation. Three years ago 1,600 East Indian coolies were imported, and found very useful. Another importation is being talked about, but I hope that improved government, more thorough control, and the tentative adoption of European ideas and habits, necessarily resulting from longer contact, will, in course of time, render the Zulu Kafirs in Natal a working and productive element in the community.

In no part of the world are mission operations more extensively prosecuted than in Natal. Every creed and country of Christendom has planted a station in some locality or other. The Americans were the first in the

field, and are the most numerous. Hospitals are founded for the use of the natives, and every encouragement afforded to all movements tending to advance the native morally. The colonists know that their own prospects are intimately involved in the social elevation of the aborigines around them, and, whatever may have been said to the contrary, are most anxious to see the native assume the duties and responsibilities of a civilized man. In saying this I only give expression to the sense of the whole colony.

GOVERNMENT.—DEFENCES.—LOYALTY.

Politically speaking, Natal is better off than many colonies of her age and standing. She has at the head of affairs a governor, paid by the colony, though appointed by the Crown. With him are associated several heads of departments and public servants, also nominated from home, who form an Executive Council. Then there is a Legislative Council, an assembly composed of twelve elective and four official members. The first-named are chosen for a term of four years by the colonists, acting on a very liberal franchise. This assembly deliberates upon and passes the laws of the land, and, though possessing the power of rejecting any measure, exercises no executive control whatever, and does not influence by its decisions the administration of Government. The plan is considered defective in this respect, and will probably be remodelled, so as to admit a modification of the responsible element. The machinery of government will be best described by the following return of heads of expenditure.

EXPENDITURE.

	1862.	1861.	1860.
	£ s. d.	£ s. d.	£ s. d.
Civil Establishments—			
The Lieutenant-Governor ..	233 0 0	249 18 10	195 0 0
Executive Council	50 0 0	50 0 0	50 0 0
Colonial Secretary	854 0 0	877 12 0	1,010 8 0
Secretary for Native Affairs.	198 0 0	198 0 0	198 0 0
Colonial Treasurer	250 0 0	250 0 0	246 12 9
Auditor	585 0 0	612 7 6	582 10
Registrar of Deeds and Dis-			
tributor of Stamps	521 10 0	513 3 4	480 0
Surveyor-General	325 0 0	325 0 0	404 10 11
Colonial Engineer	711 9 0	699 5 10	405 4 5
Customs	1,485 0 0	1,442 4 6	1,428 17 3
Post Office	3,522 2 2	2,553 2 7	3,734 13 9
Post Office	1,052 7 6	1,050 19 10	869 10 5
Immigration	287 8 6	273 8 6	...
Field Commandants and			
Cornets	460 0 0	438 18 4	422 3 0
Ferry-men	375 0 0	338 2 7	354 0 0
Judicial Establishments—			
Supreme Court	3,035 12 6	2,926 10 8	2,768 6 10
Sheriff	200 0 0	200 0 0	200 0 0
Attorney-General	687 0 0	673 7 8	662 1 4
Division Courts	5,591 18 9	5,525 5 10	5,201 1 5
Ecclesiastical Establishments.	1,200 0 0	960 13 4	725 0 0
Education	844 8 8	837 16 9	428 0 0
Medical	502 6 8	516 18 0	428 16 0
Police and Gaols	2,623 5 0	2,525 12 5	2,288 11 9
Pensions, Retired Allowances,			
and Gratuities	782 9 7	744 6 3	154 9 6
Revenue Services, exclusive of			
Establishments	880 0 0	1,064 16 1	744 10 2
Administration of Justice, ex-			
clusive of Establishments ..	485 0 0	1,009 19 10	473 7 8
Education, exclusive of Estab-			
lishments	1,365 0 0	1,339 7 1	1,357 13 5
Hospitals, exclusive of Estab-			
lishments	705 0 0	1,067 13 7	768 3 0
Police and Gaols, exclusive of			
Establishments	1,256 0 0	1,675 8 2	1,213 15 4
Rent	865 12 0	792 10 0	751 5 3
Transport	1,386 9 8	1,300 15 2	2,046 2 9
Conveyance of Mails	3,670 0 0	2,767 10 11	2,616 1 7
Works and Buildings	9,512 0 0	8,364 5 8	5,143 8 7
Roads, Streets, and Bridges ..	15,450 0 0	11,431 13 11	3,894 2 7
Miscellaneous Services	6,570 10 0	8,925 0 1	5,206 7 10
Aborigines, exclusive of Es-			
tablishments	500 0 0	366 14 5	394 3 11
Immigration	11,420 0 0	12,454 8 8	17,120 15 4
Gratuities to Religious, Cha-			
ritable, and Scientific Insti-			
tutions	315 0 0	285 0 0	285 0 0
Colonial Allowances	1,000 0 0	1,000 0 0	...
Special Payments .. ..	...	12,413 19 7	4,672 10 11
Interest	2,700 0 0	3,405 0 0	...

The Bench is represented by a supreme court of three judges, and by divisional courts under the jurisdiction of magistrates. When the colony was annexed to the Cape, Roman Dutch Law was proclaimed, and is still the common law. Cases between natives are adjudged according to Kafir law, a rather complex variety of the *lex non scripta*. The bar is amply and ably filled. The press holds a respectable position, being represented by the *Natal Mercury*, published twice a week, and by five weekly newspapers. Pamphlets and books are occasionally issued.

When the question of colonial defence is being so earnestly discussed in English circles, it is pleasant to have to show that one colony, at least, is doing what it can to relieve the mother country of any superfluous burden. While Natal continues the frontier of British possessions in South Africa; while the numerical disproportion between its white and black populations remains so great; while the colonists are, as at present, allowed no voice whatever in the management or government of the colonial races, with whose interests they are so closely identified, the Imperial Government is, and will be, bound to afford a considerable measure of military protection. Hence the garrison that is stationed in the colony cannot, with any show of justice, or with a regard to prudence, be interfered with. But the colonists are far from idle, although under the sheltering wing of the mother country. A liberal allowance is voted annually out of the colonial treasury towards the maintenance of the military staff. A mounted police force is being formed at local cost, and this body will prove an invaluable protective agency. Volunteer corps are in active existence in every district, and rifle associations are popular institutions. It cannot be said of Natalians that they shrink from incurring the colonial responsibilities of self-defence, although the privileges of self-government are exercised to a very limited extent indeed. I place especial stress upon this matter, because

the general misconception that prevails in regard to the colonists' aims and intentions, and because I wish that the real *verve* of colonisation could be more thoroughly understood by my own countrymen. For who is the colonist, and to what do his labours tend? British in birth, thought, and instinct, he severs old ties, and unites his fortune and his family to exile and privation, not merely for the promotion of his personal interests, nor yet to retrieve a lost position, to restore a shattered fortune, or to advance his social status. He has a wider sphere of usefulness than the mere circle of his own concerns. He is, moreover, involuntarily assisting to carry out that world-wide movement by which Great Britain is being girdled by new nations and states, and all the benefits of free commerce and free government diffused over the globe. It is this which I humbly conceive to be such an honourable feature in the colonist's position. It may be seen evolving its practical results in the happiest modes, in a wider scope for public energy, in the enlargement of opportunities, in a loss of those more repressive class restrictions by which, in old communities, ability is often stifled and useful effort checked. I have known intelligent working-men take part in public movements, and hold posts of public responsibility, not through any overthrow of wise class distinctions—for in social life these boundaries even in a colony are still maintained—but simply through their reputation for intelligence and good sense, and through a conviction that their deportment in these capacities would bring honour to themselves and benefit to their fellow colonists. The colonist's work there being one of such present utility and future import, it seems strange that his interests should be treated so carelessly and his desires so often misconstrued. He has not, as seems frequently imagined, alienated all claim upon Imperial regards, lost all loyal sentiments, and patriotic aspirations. On the contrary, I know by twelve years' association, by personal intimacy, and by the feelings that animate my own colonially affected breast, that there is amongst the British inhabitants of Natal, as much devoted attachment to the Queen, as much pride in all that con-

cerns the prosperity and the glory of our nation, as strong a desire and determination to remain British subjects as there can be amongst those who have never passed through the toils or the vicissitudes of a colonial life.

I must now close this imperfect sketch of a valuable dependency. The future of Natal is bright with hope, for capital and population are flowing towards it with a steady pertinacity that augurs well for its continuance. In fifteen years the colony has emerged from a state of barbarism to one of comparative civilisation, and during that period we have witnessed the reclamation of tens of thousands of uncultured acres, and the upspringing in the remotest parts of the colony of incipient villages and substantial farmsteads. There is every probability that the rich wastes of Zululand on the north will before long be annexed to the colony, while the fat pastures and vast forests of Noman's land on the south have already extended our territorial limits by two or three million acres. It would be easy to point out how great a future is opening to the several States in South Africa, for in addition to the Cape Colony and Natal, to the Orange Free State and the South African Republic, further even yet in the luxuriant jungle lands and savannas of the north, the English trader is indomitably pressing on his way towards the Equator, laying bare to the growing enterprise of a commercial age territories that have hitherto been falsely regarded as hopelessly sterile and desolate. It needs little prescience to foresee that this immense range of territories, comprising, as it does, six established Colonies or Republics, each having independent resources, individual interests, and separate responsibility, shall yet be known as the South African Confederacy, the free, and let us hope, the concordant Italy of the Southern world.

DISCUSSION.

The Bishop of NATAL said he hoped there was some Natalian present who was better acquainted with the mercantile proceedings of the colony than he was. He had listened with great interest to what he considered was a very able paper, and he thought Mr. Robinson, who was a very intelligent man, and the editor of one of the leading newspapers in the colony, had favoured them with some valuable information as to the present state of Natal, its products, and future prospects. There was nothing which he (the Bishop) could add to those observations, and but little that he wished to correct; he would, however, draw attention to one or two points which he noted during the reading of the paper, and he was desirous of saying a few words on one subject especially, viz., the condition of the native tribes of the colony. Mr. Robinson had regarded this matter in his paper from a colonial point of view; he hoped they would allow him (the Bishop) to view it rather from a missionary point of view. He concurred in all that had been said as to its being the duty of Englishmen, going forth to these colonies, to realise the responsibilities under which they lay, as having been intrusted by the Great Creator with the care of the inhabitants of these distant regions, and as being thus privileged amongst the nations of the earth. They knew that their own countrymen had been gifted with wonderful powers of mind and of government; they knew that we had had placed in our hands large colonies, and amongst them this district of Natal; and that colony was inhabited by native tribes, for the most part in a state of barbarous ignorance, amongst whom we were now introducing civilisation and Christianity. He thought no one in this room would doubt that we had received this colony in charge from Him who was the Great King of all the earth; and the blessings of peace in this colony were only to be expected if we did our duty to the native tribes, not leaving them in ignorance and barbarism, but endeavouring to raise them to that high status which we ourselves occupy. Mr. Robinson had fully recognised the desire of the native community to avail themselves of the benefits of education, which, however, had not at present been carried on to a satisfactory extent. The natives now

contributed towards the taxes of Natal £17,000 a year, a very considerable sum to be raised from a barbarous population; and out of that sum Sir George Grey had appropriated £5,000 for spreading instruction amongst the people. The local government of the colony had been for two or three years past endeavouring to carry out the measures devised by Sir George Grey, but he did not think it could be said that they had done so with any great amount of success, seeing that at present, out of a native population of 190,000, there were only about 5,000 persons under direct teaching. It would therefore be seen that there was yet a great work to be done. That the natives were capable of being taught and raised from their present barbarism he had the most ample proofs; and he thought it would interest the meeting to hear one or two letters read which he had received from natives of Natal who had communicated their proceedings to him, asked his advice in difficulties, and informed him how things were going on. He could have wished that Mr. Robinson had omitted from his paper the observation wherein he had cast rather a slur upon the missionary labours, by saying that the colonists would rather employ a raw Kafir from the kral than a civilised Kafir from a mission station. Mr. Robinson further remarked that "the Zulu was eminently susceptible of civilisation, but he was equally open to the injurious impressions left by vicious example and criminal association." That was doubtless true; and they would readily understand that amongst the mixed population of a young colony there were many influences tending to corrupt the natives, and to which of course those who came to the missionary stations became especially exposed, and from which it would be easily understood that they were exempt when in their native kraals. He had often felt it his duty, when natives had spoken to him of the misconduct of Englishmen who had forgotten those high principles which were the characteristic of our countrymen, to point out that such men were not Englishmen in the true sense of the word; that they did not represent truly the English character, but were a disgrace to the name of their country. There were other disadvantages under which the natives laboured: they were ignorant; they could not speak the English language and their masters could not speak the native tongue. Moreover, the natives were not always so constant at their work as the Europeans expected. An Englishman who had invested capital in the colony naturally expected the natives to work regularly in his employ, and was disappointed at finding those on whom he relied affected by an irresistible desire to visit their kraals, and mingle amongst their kindred, perhaps at the time when the master most needed their labour. That was a very trying thing for Europeans generally. Then, again, the want of intercourse in language was a great difficulty. The Englishman expected the native to master the English language, but he would not occupy himself in learning the Zulu tongue. The consequence was, natives frequently made great mistakes, and the masters were disappointed in not finding their orders properly carried out. In speaking of a civilized native the colonist would mean one with a coat upon his back, although now even the uncivilized native was required to wear some sort of garment. It used to be sufficient to wear any kind of upper garment; and he knew an instance in which a man considered he was carrying out the law by wearing a lady's crinoline as his sole article of dress. Latterly he found that a law had been passed that the natives were required not only to wear a coat, but trousers also. The only difficulty about that was, that, inasmuch as their wives and daughters had not been taught to sew, it was not clear how these articles could be kept in repair. The right rev. prelate then read two letters which he had recently received from native youths, who had been trained as printers and bookbinders, and who were engaged in printing various books of the Bible translated into the Zulu language. Their education was such that they readily

composed the type from manuscript either in English or Zulu, and from those letters he (the Bishop) said it would be seen that much might be done in improving the native tribes, and therefore he hoped the reproach which Mr. Robinson had no doubt unintentionally appeared to cast upon the missionary labours in this colony, would be shown to be without foundation.

Mr. P. L. SIMMONDS said, the Bishop of Natal having confined his remarks chiefly to the social condition of the colony and the character of the native race generally, he might add a few words upon some other points touched upon in the paper. This was one of the youngest of Britain's colonies, and without any of the adventitious aids which had advanced the progress of other young settlements. It was advancing steadily in all the elements of natural wealth. All those who remembered the late International Exhibition could not fail to have been struck with the picturesque and highly interesting court of Natal, where were grouped together products which had attracted great attention both among foreigners and Englishmen. While, owing to political squabble, the older Cape Colony failed to put in any appearance with its products, Natal, as had been observed in Mr. Robinson's paper, thus became the sole representative of the South African States, and most creditably did she acquit herself on that occasion. Not only was there brought together one of the finest natural history collections of the Exhibition, showing the rich products of the chase, but mingled with it were illustrations of native customs and industries, and many valuable samples of commercial products, indicating the true resources of its present and future wealth, and there was sent with them a most admirable scientific and descriptive catalogue, drawn up by Dr. Mann, which was of itself a mine of wealth for the study of the botanist and zoologist. The large carved sideboard shown of native wood, with its accompanying maps and statistical and mineralogical charts, was of itself a credit to the colony and an index of its advance. The improvement of the harbour, the introduction of railways and steamers, machinery, and of British capital through the various companies which had been formed in London to promote useful undertakings, were all calculated greatly to benefit the colony. Already there were two or three staples of great importance, while, without doubt, many others would be developed before long. Besides producing sugar sufficient for local consumption, they were already able to ship this product to the Cape and to England to the value of £20,000 to £30,000 yearly; that, too, of as good quality as much of the Mauritius sugar. With increased skilled labour, and the full employment of machinery, much more might be done in extending sugar production. Cotton, too, was another important staple for which there were all the elements of success for the future in soil and climate. Stock trading and pastoral occupations generally would increase in future years; already the shipment of wool had increased tenfold in but a few years, and from the Free States in the interior large supplies might hereafter be looked for in favourable seasons. An extended trade would also arise with Delagoa Bay, Madagascar, and Mauritius, and hereafter the exports of the colony might be expected to bear a more equal proportion to the imports. In whatever point of view the colony was regarded, it presented a favourable aspect—the early difficulties had been got over—there was less of strong party feeling prevalent than in many other colonies, and the press, of which Mr. Robinson's journal was a most creditable example, was working energetically to advance the general interests of the colony.

Mr. R. HARWIN said, as a resident in this colony for ten or twelve years, he could speak on this subject from personal experience. He was personally acquainted with Mr. Robinson, and he could testify to the truthfulness of his character as well as to the accuracy of the statements brought forward in the paper. As a whole it presented a fair picture of Natal as it was. There were some matters in it which would have borne to have been am-

plified. Mr. Robinson might have given them a larger view of what was being done on the coast in the way of tropical production, as for instance, in sugar. He had stated that 45 mills were employed in the manufacture of sugar, at the same time he had not given due weight to the efforts which were put forth by the colonists to produce cotton. He (Mr. Harrison) had received information that this year a great deal of land in this colony would come under cotton cultivation; and there had passed through his hands, as consignee, cotton from Natal which was valued at 1s. 9d. per lb., and was pronounced to be the most suitable article for the Lancashire trade that had been brought into the market during the present depression. At the same time he thought Mr. Robinson had not given prominence to the difficulty of obtaining reliable labour. There was much in the observations of the Bishop as regarded the difference in value of the labour of the raw Kafir and one who had been trained at a missionary station, and that might be the case without disparagement to the labours of the missionary, because the native who came raw from the kraal had nothing to offer but so much brute strength, which he was willing to dispose of, and that was the most valuable commodity he could offer; whilst it might be that the native trained at the mission station had acquired some skill and entertained an exaggerated idea of his own importance, and on that account asked a higher price for his labour than the farmer thought it worth; but, at the same time, did not exhibit that amount of submission which the native did who came admitting his ignorance. There was one point referred to on which he thought the Bishop scarcely gave a fair view—that was as to what was being done in the way of educating the natives. He had stated that £5,000 per annum was reserved from the Government resources, but that not more than 5,000 people were receiving instruction. The result of his (Mr. Harwin's) experience was that, in his opinion, there was not a district in London, Manchester, or Birmingham, which was so fully supplied with labourers who were endeavouring to preach the Gospel as was Natal. Looking at the number of missionaries of various denominations engaged there, he thought that, taking the whole together, London itself was not so well off in regard to spiritual instruction as Natal and the Kafirs. As regarded the possibility of elevating the natives, there was no question about it. The letters read by the Bishop showed that the natives were capable of civilisation and intellectual growth. He was acquainted with stations in which there were large numbers of natives decently clad, who were not only capable of doing all the ordinary farm work in European style, but were also proficient in the common run of mechanical labour, such as building a waggon or making a plough, and house-building and brick-making were also performed by them. As regarded the fertility of the soil, the excellence of the climate, and the beauty of the country, there could not be two opinions. Those who had not trodden the shores of Southern Africa could form no idea of the wonderful beauty the country put on in early spring; and those who had visited this district from the Cape Colony—accustomed as they were to the sterility of that locality—were in transports of admiration on beholding for the first time the beauty of Natal. He knew from his own mercantile relations with the colony how much it was progressing. As regarded the production of cotton, it was undoubtedly increasing, and with respect to sugar, though it did not equal Mauritius in quantity, the quality of the article was fully equal; and he hoped soon to see Natal a large exporter both of sugar and cotton. The trade in wool was also becoming largely developed. The country had suffered very greatly from drought during the last three years, so that the recent tables did not fairly represent its actual progress. All things considered, Natal was not only a very beautiful country, but also a very hopeful one, and one which ought to attract a larger share of attention from those who were seeking new homes and fresh fields of labour.

The Bishop of NATAL said that he thought the last speaker had misunderstood his remarks as to what had been done for the education of the natives. What he said was, that he believed there were not more than 5,000 under regular instruction, though, no doubt, a much larger number came under missionary influence.

The CHAIRMAN said it now devolved upon him to perform the very agreeable duty of moving that a vote of thanks be given to Mr. Robinson for his paper. That paper contained a very interesting account of a very important, and, to them, almost unknown region. The writer had drawn a graphic picture of the beauties of the country itself, but, what was more important, he had given them valuable information as to the natives of the colony. He was sure they would agree that they owed much to the writer of this paper, who, he understood, was a distinguished member of the press in the colony; and it would be of importance to them, and of value to this country, to have information to the same extent with respect to our colonies in other parts of the world. It must be most gratifying to them as Englishmen to see their countrymen and language, their civilization and religion, extending throughout the globe; and he trusted their colonies would rise to that position which would enable them to govern and act for themselves. At the same time they must take care not to be too hasty in establishing for themselves that independence which no doubt they would ultimately attain. He could not sit down without expressing his own feeling of gratification, in which all present would share, at the highly interesting remarks made by the right reverend prelate, who had honoured them with his presence this evening. He begged to thank his Lordship for the information he had given them. The Chairman concluded by proposing a vote of thanks to Mr. Robinson for his valuable and highly instructive paper.

The vote of thanks having been passed,

The Secretary announced that on Wednesday evening next, the 13th instant, two papers would be read; the first by J. L. W. Thudichum, M.D., F.C.S., "On the Collection of Excrementitious Matter, and the Application of it to the Benefit of Agriculture and the Relief of Local Taxation;" and the second, by the Rev. H. Moule, "On a System of Earth Sewage." On this evening C. Wren Hoskyns, Esq., Member of the Council, will preside.

Home Correspondence.

TWIN SCREW STEAMERS.

SIR,—In support of Capt. Symonds' admirable views on this subject, I beg to call the attention of the Society to the fact that in the year 1822 Mr. Jacob Perkins, among his other numerous inventions, constructed a screw steam boat or barge for canal navigation.

Mr. Perkins adopted the screw propeller, of course, in order to prevent injury to the canal banks; but stated as his firm opinion that it was essentially necessary to have two screw propellers revolving in opposite directions, so as to ensure the perfect action of the rudder. His screws were something similar to the ordinary smoke-jack fly, mounted on the same centre, one shaft being tubular, as in the dial-work of a clock, and made to revolve in opposite directions. A large body of the members of the Society attended to see the performance of Mr. Perkins's steam canal barge, which was quite satisfactory, considering, of course, the rude state of practical knowledge in those days.

I am, &c.,

HENRY W. REVELEY.

Reading.

To Correspondents.

Letters from Messrs. Dicks and Plumptre are in type, but are omitted this week for want of space.

MEETINGS FOR THE ENSUING WEEK.

- MON.** ...R. Geographical, 8½. 1. Arrival of the Expedition under Captains Speke and Grant at Khartum, on the Nile, from Zanzibar. 2. Despatches from Governors Sir H. Barkly and Sir Geo. Bowen—Landsborough's Traverse of Australia. 3. Lieut. Oliver, "On Madagascar."
- TUES.** ...Medical and Chirurgical, 8½.
Civil Engineers, 8. 1. Discussion on Mr. Zerah Colburn's paper on "American Iron Bridges." 2. Mr. W. Watson, "On the Communication between London and Dublin."
Zoological, 9.
Syro-Egyptian, 7½. Mr. Marsden, "Some Remarks on the Coffin Lid of Men-Ka-ra, the Mycerinus of the Greeks."
Royal Inst., 3. Prof. Tyndall, "On Sound."
Anthropological, 7½.
- WED.** ...Society of Arts, 8. 1. Dr. J. L. W. Thudichum, "On the Collection and Utilisation of Excrementitious Matter, &c." 2. Rev. H. Moule, "On a System of Earth Sewage."
Graphic, 8.
Microscopical, 8.
Literary Fund, 3.
Archæological Association, 4. Annual Meeting.
- THURS.** ...Antiquaries, 8½.
Royal Inst., 3. Prof. Ansted, "On Geology."
- FRI.** ...Royal Inst., 8. Dr. Odling, "On the Molecule of Water."
Philological, 8. Annual Meeting.
R. United Service Inst., 3. Major F. R. Taylor, "On Military Surveying."
- SAT.** ...Royal Inst., 3. Professor Max Muller, "On Language."

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.

[From Gazette, April 24th, 1863.]

Dated 15th April, 1863.

944. E. P. Colquhoun and J. P. Ferris, 1, Lawrence Pountney-hill—Imp. in fire-bars for the furnaces of steam boilers and fire-grates.
946. W. Clark, 53, Chancery-lane—Imp. in apparatus for the transport of goods. (A com.)
948. A. Marriott, High-street, Higham Ferrers, Northamptonshire—Imp. in boilers for heating buildings, and in regulators for the same.
950. H. Eaton, Manchester—Imp. applicable to presses for baling purposes.
- Dated 16th April, 1863.
954. J. B. Watts, Birmingham—Imp. in steel sword hilts.
956. I. Baggs, Cambridge-terrace, and W. Simpson, Tivill Upper Mills, Kent—Imp. in purifying and treating coal gas, sulphuretted hydrogen, and other gases containing sulphuretted hydrogen, and in obtaining sulphur, sulphuric and other acids in such treatment.
958. S. Moulton, Bradford—Imp. in apparatus or means for lessening the recoil of cannon.
962. F. A. E. Guirounet de Massas, Hoxton—Imp. in smut machines, and in machines for cleansing and peeling grain and seeds.

Dated 17th April, 1863.

968. R. H. Lawson, Victoria-terrace, Victoria Docks, and W. Darlow, Victoria-place, North Woolwich-road—Imp. in apparatus or means for obtaining motive power.
970. C. Turner, Alfredale Felt Mills, Hunslet, Leeds—Imp. in the manufacture of felted fabrics.

[From Gazette, May 1st, 1863.]

Dated 20th December, 1863.

5410. W. Perkins, Churchfield-house, Margate, Kent—Imp. in the manufacture of a substitute for turpentine, which is also applicable to the manufacture of varnishes, and to purposes to which turpentine is now ordinarily applied.

Dated 24th January, 1863.

218. E. Shackleton, Loth, near Ruysbrook, Belgium—Imp. in looms for weaving.

Dated 14th March, 1863.

697. W. Young, 77, Fleet-street—Imp. in type-composing and distributing machines.

Dated 20th March, 1863.

742. W. Reay, jun., Thropton hill, near Rothbury, Northumberland—An improved machine for amalgamating minerals, and other metalliferous and metallurgical products or substances.

Dated 26th March, 1863.

789. G. Cowdery, Llanymynech, Shropshire—Imp. in machinery for making bricks.

791. N. R. Hall, Rosherville Northfleet, Kent—Imp. in construction of weighing apparatus.

793. T. Parkinson and J. Wood, Manchester—An improved application of embroidery to cotton printed fabrics.

795. G. Davies, 1, Serle-street, Lincoln's-inn—Imp. in engraving upon metals. (A com.)

797. J. Norton, Bray, Wicklow, Ireland—Imp. in projectiles or ignition missiles.

799. F. Applegate, Bradford-on-Avon, Wiltshire—Imp. in railway carriage doors.

Dated 27th March, 1863.

801. J. Grantham, 31, Nicholas-lane—Imp. in apparatus connected with machinery used in manufacturing compressed fuel.

803. R. A. Brooman, 166, Fleet-street—Imp. in machinery for scouring wool. (A com.)

Dated 28th March, 1863.

809. A. H. Perry, Guildford-road, Brighton—Imp. in working railway points, switches, and signals, and in the apparatus to be employed for that purpose.

811. J. Leeming and R. S. Markindale, Broughton—An imp. in carding engines.

813. W. Symons, Hatton-garden—Imp. in barometers.

815. J. Dale, Manchester, G. Bischof, jun., Swansea—Imp. in the manufacture of aniline, naphthylamine, and other analogous bodies, and in apparatus connected therewith, which apparatus is also applicable to obtaining finely divided metallic iron for other purposes.

Dated 30th March, 1863.

819. H. Hughes, Homerton, Middlesex—Imp. in machinery for shaping metal and plastic substances.

821. W. E. Newton, 66, Chancery lane—An improved process for producing yellow colouring matters and other colours, which may be derived therefrom. (A com.)

823. J. Payne, Kircudbright, N.B.—Imp. in fire-escapes.

Dated 31st March, 1863.

825. J. Smethurst, Royton, Lancashire—Imp. in steam engines and boilers, part of which imps. is applicable to heating purposes.

827. R. Furnival, Manchester—Imp. in and applicable to platting or braiding machines.

829. Lieut. A. H. Bell, R.A., Dover, and V. G. Bell, Woburn-place—An improved mode of constructing the armour of vessels of war.

831. E. O. Coe, Brook-street, Grosvenor-square—Imp. in propellers for ships and other vessels.

833. J. M. Dunlop, Manchester—Imp. in machinery for ginning cotton.

Dated 1st April, 1863.

834. J. S. Grimshaw, Huncote, near Accrington—Imp. in carding engines.

835. J. Hindle, Sabden, W. F. Calvert, Enfield, and E. Thornton, Padiham—Imp. in looms for weaving.

837. J. Bray, Stretford, Lancashire—Imp. in the construction of omnibuses, railway carriages, and other vehicles.

838. M. Henry, 84, Fleet-street—An improved method of lubricating. (A com.)

840. W. West, Euston-road—Imp. in working railway signals.

841. W. Mitchell, Carlton hill-east, St. John's-wood—An improved process for coating iron. (A com.)

843. E. B. Wilson, 5, Parliament-street—Imp. in the manufacture of iron and steel and other metals, and in the apparatus employed therein.

Dated 2nd April, 1863.

847. E. F. Clarke, Holmer-road, Widemarsh, Herefordshire—Imp. in the means of fastening rails for railways.

849. J. Cassell, La Belle Sauvage-yard—Imp. in stills for the distillation of petroleum and other heavy oils.

851. W. Jones, Liverpool—Imp. in the construction of ships or vessels, part of which imps. are also applicable for constructing buildings, and for various other purposes in which rolled iron is employed.

Dated 4th April, 1863.

855. A. Stewart, Helensburgh, Dumbarton, N.B.—Imp. in saddles.

856. J. Blain, Manchester—Imp. in the finish of threads and yarns.

857. P. Hanrez, Marchiennes au Pont, Belgium—Improved machinery or apparatus for drying coal, grain, and other substances.

859. W. H. Perkin, Seymour-villa, Sudbury—Imp. in the manufacture of red and orange colouring matters.

861. J. Gimson, Leicester—Imp. in the means of actuating shuttles in looms for weaving narrow fabrics.

863. P. Spence, Newton heath, near Manchester—Imp. in the manufacture of sulphuric acid and sulphate of iron.

Dated 6th April, 1863.

865. B. Cooper, Frome, Somersetshire—Improved apparatus for feeding, scribbling, or carding engines.

869. J. Raiton and H. Booth, Blackburn, Lancashire—Imp. in machinery for carding cotton and other fibrous substances.

Dated 7th April, 1863.

873. H. Gilbee, 4, South-street, Finsbury—A new composition for dressing and preparing silk, cotton, and woollen tissues and fibres, and also mixtures of the same. (A com.)

877. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in polishing precious and other hard stones, and in the machinery or apparatus employed therein. (A com.)

879. R. A. Brooman, 166, Fleet-street—Imp. in reproducing or obtaining facsimiles of the veins, pores, knots, and figures of wood upon paper and other surfaces. (A com.)

881. A. V. Newton, 66, Chancery-lane—Imp. in projectiles for ordnance, and in fuses therefor. (A com.)

Dated 8th April, 1863.

883. W. Simpson, Liverpool—Imp. in insulating the magnetic needle or needles in compasses.

885. J. N. Brown, Handsworth, Staffordshire—Imp. in securing or connecting the bearing springs of railway carriages and waggon to the axle boxes of the said carriages and waggons.

886. T. Gray, Lower Mitcham, Surrey—Imp. in preparing and bleaching jute and other vegetable fibres for spinning and other purposes.

887. J. R. Harris, Hawley-road, Kentish-town—Imp. in propelling vessels.

889. W. H. Mitchell, Hampstead—An improved construction of barometer.

891. A. Kinder, 20, Cannon-street—Imp. in coating or covering lead or alloys of lead with tin or alloys of tin, and in the apparatus employed therein.

Dated 9th April, 1863.

893. D. J. Cooke, Manchester—Improved compounds or compositions for sizing, stiffening and colouring yarns and textile fabrics.

894. T. T. Heath, Liverpool—The application of glass for ceilings and the like overhead parts of houses and other structures.

897. A. Hett, London, and F. W. Basset, Camberwell—Imp. in preventing the fouling of ships' bottoms, and in cleansing the same when fouled.

899. R. K. Penson, Ferryside, Carmarthenshire—Imp. in apparatus used in warming railway carriages. (A com.)

903. G. Low, Newark-on-Trent, Nottingham—Imp. in machinery for boring rocks and other hard substances.

Dated 10th April, 1863.

905. G. Colomb, Aigle, Switzerland—A process of manufacturing factitious blocks of wood of diversified shades and hues proper for veneering and other purposes.

907. T. Baldwin, Bury—Imp. in superheating steam, and in apparatus connected therewith.

909. H. R. Spicer, 3, Clement's lane, Lombard-street—Imp. in boxes or cases for the enclosure and preservation of human remains.

910. R. Smith, 10, Northampton terrace, Compton road, Islington—An improved medicated oil for the preservation of metal, wood, or stone.

911. J. Wightman and C. Dening, Chard, Somersetshire—Imp. in horse rakes.

913. H. W. Ripley, Montpellier-lawn, Cheltenham—Imp. in machinery for preparing and printing wool and other fibres. (A com.)

Dated 11th April, 1863.

915. F. Versmann, 7, Bury-court, St. Mary Axe—Imp. in moulding machines.

917. D. Mylrea, Church, near Accrington—Imp. in fire-bars or furnace grids.

919. J. Farrar, Halifax—Imp. in machinery or apparatus for twisting or doubling yarns of wool or other fibrous substances.

921. P. P. Baly, 4, Robert-street, Adelphi—Imp. in constructing breakwaters, piers, sea walls, and other similar structures.

922. C. A. Collins, Trowbridge—An improved method and apparatus for loading carts and waggons with hay, straw, and other similar products.

Dated 13th April, 1863.

925. J. Gill, Edinburgh—Imp. in printing machinery.

927. R. Leggett and R. Gittus, Mildenhall, Suffolk—Imp. in the construction of machinery or apparatus for cutting chaff and other agricultural produce.

928. J. Lark, White Lion Wharf, Bankside, Southwark—Imp. in the manufacture of artificial fuel and cement.

929. R. Reeves, Bratton, Wiltshire—Imp. in the manufacture of liquid manure drills.

931. M. Myers, Wigmore-street, Cavendish square—Imp. in the construction of trunks, portmanteaus, and boxes.

Dated 14th April, 1863.

933. J. Nasmith and S. Thornton, Manchester—Imp. in machinery for carding cotton and other fibrous substances.

935. G. T. Smith, Ordsall House, East Retford, Nottinghamshire—Imp. in metallic window shutters.

937. J. Combe and J. H. Smallpage, Leeds—Imp. in the action and arrangement of machines for winding cops; in the construction and arrangement of banks for holding cops for warping purposes; in the formation of shuttles for receiving cops; and for apparatus for packing and securing cops in shuttles, one part of which imp., consisting of a spring clutch, is applicable to machines in general.

939. H. Trapnell, Bristol—Imp. in vent pegs.

941. R. A. Brooman, 166, Fleet-street—Imp. in lamps for burning light and heavy mineral and vegetable oils. (A com.)

Dated 15th April, 1863.

943. J. Leach, Cheadle, Chester—An improved machine or apparatus for washing, squeezing, mangling, and churning.

947. H. A. Bonneville, 24, Rue du Mont Thabor, Paris—Imp. in the construction of gas burners. (A com.)

949. W. Spence, 50, Chancery-lane—Imp. in the manufacture of gunpowder. (A com.)

951. J. S. Morton, Northampton—Imp. in locks.

952. A. V. Newton, 66, Chancery lane—An improved construction of blowing apparatus. (A com.)

953. T. B. E. Fletcher, Birmingham—Imp. in apparatus for collecting the solid portions of sewage.

Dated 17th April, 1863.

964. S. Riley, Oldham—Imp. in the manufacture or preparation of cocoa and chocolate.

Dated 18th April, 1863.

972. C. W. Siemens, 3, Great George-street, Westminster, and F. Siemens, Birmingham—Imp. in furnaces which are principally applicable to the smelting of iron.

974. T. A. Weston, Birmingham—Imp. in ratchet levers.

976. G. A. Buchholz, Montague place, Clapham-road—Imp. in apparatus for hulling grain, and for reducing granular substances.

Dated 20th April, 1863.

980. G. Graham, W. Graham, and J. Graham, Burnley, Lancashire—Imp. in machinery for folding or plaiting fabrics.

982. J. Robey, Newcastle-under-Lyme—Imp. in apparatus for separating fluids from more solid matters mixed or combined therewith.

Dated 21st April, 1863.

988. E. L. Simpson, Bridgeport, U. S.—An imp. in waterproof compounds, and in fabrics prepared therewith.

990. M. Runkel, Hotel Sabloniere, Leicester-square—Imp. in marine steam engine governors. (A com.)

994. W. E. Newton, 66, Chancery-lane—Imp. in wrenches. (A com.)

996. W. Campion and G. Wilson, Market-place, near Sneinton, Nottinghamshire—Imp. in machinery or apparatus employed in the manufacture of looped fabrics.

Dated 22nd April, 1863.

998. F. E. Bryant, Alfren-street, Bedford square—Improved apparatus for ascertaining the temperature of steam, and its power of tension. (A com.)

1000. F. Durand, Paris—Imp. in moulding articles of china or other clay, or of other plastic materials.

Dated 23rd April, 1863.

1003. J. Whitley, J. B. Pope, and J. W. Burton, Leeds—Imp. in the manufacture of metals.

1010. W. E. Newton, 66, Chancery-lane—An improved mode of repairing worn out files and rendering them again fit for use. (A com.)

INVENTIONS WITH COMPLETE SPECIFICATIONS FILED.

1020. R. Lavender, 332, Goswell-road—A new compound to be used as a lubricator.—24th April, 1863.

1065. G. W. Fuller, Cambridge Port, Massachusetts—A new and useful or improved submarine lantern to be used in explorations beneath the surface of the ocean or any other large body of water.—28th April, 1863.

PATENTS SEALED.

[From Gazette, May 1st, 1863.]

<i>May 1st.</i>	3006. H. Griffin.
2806. W. S. Kennedy.	3007. W. N. Hutchinson.
2987. A. C. Dewies.	3066. E. S. Cathels.
2993. R. A. Brooman.	3112. R. Hardman.
2994. R. A. Brooman.	3220. W. Clark.
2995. R. A. Brooman.	

[From Gazette, May 5th, 1863.]

<i>May 5th.</i>	3151. R. Hawthorn and W. Hawthorn.
1958. J. McGeary.	3188. J. T. Caird.
3015. H. Gardner.	3224. A. V. Newton.
3019. C. W. Spruyt.	3285. P. Todd.
3022. G. Kent and E. P. Griffiths.	3408. A. V. Newton.
3026. J. Whitaker.	2472. J. H. Johnson.
3031. J. Shanks.	113. J. B. Rock.
3035. G. F. Lyster.	447. F. J. Reed.
3043. W. Galloway and J. Galloway.	456. J. J. Badart.
3090. C. Littleboy.	618. W. Allen and W. Johnson.
3099. R. Brown.	631. J. Morris and T. Newton.
	636. A. Wilson.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

[From Gazette, Mar 5th, 1863.]

<i>April 27th.</i>	1178. J. Chatterton & W. Smith.
1121. D. West.	<i>May 1st.</i>
<i>April 28th.</i>	1095. F. Preston.
1198. J. Denis.	1103. J. Gardner.
<i>April 29th.</i>	<i>May 2nd.</i>
1085. G. Masure.	1111. J. Brickhill and J. Noble.
1138. W. Evans.	1119. T. Heatley & W. Paddock.

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

[From Gazette, May 5th, 1863.]

<i>April 30th.</i>	<i>May 1st.</i>
1095. F. Potts and T. Vann.	1033. R. A. Brooman.
	1058. I. Holden.